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# The Effects of Children Properly Utilizing CPS Tools in the Classroom

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The Effects of Children Properly Utilizing CPS Tools in the Classroom  
by  
Theresa R. Lyness

A Project in Creative Studies

Submitted in Partial Fulfillment  
of the Requirements  
for the Degree of  
Master of Science

May 2013

Buffalo State College  
State University of New York  
Department of Creative Studies

## ABSTRACT

It is my responsibility as an educator to prepare students by teaching them how to think and not what to think. This project focuses on the importance of teaching our youth creative ways to solve problems and use creativity in a more meaningful way to assist with richer thinking. This project provides students with some necessary tools in order to help them become lifelong learners and problem solvers. It provides students with necessary tools and skills needed for success in the 21<sup>st</sup> century. The project includes an introduction to Creative Problem Solving (CPS) process and tools for different age groups and focuses on how the tools affect individual students. This project also highlights various teachers' feedback and reflection on the use of CPS tools in the classroom. Included in this project is a discussion of tools that were taught, which tools worked best with which grade level and the feedback from students, teachers and administrators. The finished project includes a tool deck for students as a convenient way to have the necessary tools in front of them on a daily basis for a whole school year.



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Theresa Lyness

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April 28<sup>th</sup>, 2013  
Date

Buffalo State College  
State University of New York  
Department of Creative Studies

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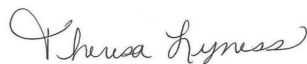
April 28<sup>th</sup>, 2013



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Dr. Susan Keller-Mathers

April 28<sup>th</sup>, 2013



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Candidate

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## **SECTION 1: BACKGROUND TO THE PROJECT**

### **Purpose and Description**

Studying creativity is becoming more common in schools. As a Building-Based Substitute at a Charter School, I have had the opportunity to work with a variety of teachers and students. The benefit of working with children of all ages is that I am able to identify what works best for each particular age group. Obviously, creativity has to be used in a developmentally appropriate meaningful manner in each grade to be successful. I have also noticed that students highly benefit from learning about creativity and more importantly, learning how to use creativity independently in order to achieve success.

The purpose of this project is to provide students with the necessary tools and techniques in order to properly utilize specific creativity tools and enhance their own general creativity. It is one thing for teachers to advise their students that they need to be creative, but what if the students aren't able to understand *how* to? It is my goal to ensure that the students have the necessary tools and techniques introduced to them in order for them to further their creative potential. There will be numerous tools introduced to children where they will be given the opportunity to experience several CPS tools. Not only will children be able to use the CPS tools in order to solve a personal problem, but they will also have the tools available for them in order to use it in their academics as well. A goal of this project was to assess the effectiveness of CPS tools used with students. It was my intent to provide ways for teachers to promote creative thinking in their classrooms to enhance the classroom and also to assist with efficiency. Students were also shown ways to apply each tool so that is more meaningful to them.

### **Rationale**

It is imperative for children to have a background of how to properly utilize creativity and CPS on an individual level. Therefore, I chose to focus my project around the Creative Problem Solving tools as an important aspect of how to intertwine creativity in the classroom. Adults have tools to use in order to help them build something new, such as a kitchen cabinet or bookshelf. If adults didn't have the necessary tools, think about how difficult it would be to build anything. This is the same with children. If students are not provided with the required basics of how to think creatively, we as educators cannot expect them to do it automatically. My hope is to have students benefit from having these tools in order to help them be richer thinkers in the future.

Throughout this project, students are introduced to a set of tools included in a tool deck, so whenever they need assistance with writing a paper, or solving a problem for example, they will be able to pull out their tool deck and use the appropriate tool. I am truly eager and motivated by this project because I believe that it is vital that children of all ages are given the essential criteria needed to become lifelong learners and leaders. Additionally, I am passionate about empowering youth. I believe that creative thinking skills are essential life skills that need to be taught at an early age. The only way to prepare our youth for their uncertain future is to equip them with tools that help them effectively deal with the unknown challenges in the 21<sup>st</sup> century. Students are much more excited about their learning and motivated when they experience new tools they can use. I am always excited to teach and learn from the students as well as identify their reactions to each tool. I plan on providing each student with their own tool deck to use throughout the year when I have my own classroom.

Unfortunately, teachers in my school are in a demanding place as we speak. Educators currently have pressure from administration, the State Education Department (SED) and our current Board to increase student scores on the New York State tests in order to stay open. Since we are a charter school, we have tremendous pressure every year because we can easily be closed due to a variety of reasons, with test scores weighing heavily into it. Many teachers in critical grades suffer from the stress of their students scoring high to satisfy administration, which puts a damper on the level of creativity in the classroom. It is apparent that some students are not great test-takers and one test should not have that much power over the student, as well as, the teacher. I strongly believe that making teachers aware of deliberate creativity tools would be a simple and effective way to get teachers to stimulate creative thinking in the classroom by weaving it into their lesson plans without taking away from the need to do well on standardized tests. As many of the teachers have stated, “The tools are easy to learn and simple to use once practiced or modeled in the classroom.”

## **SECTION 2: PERTINENT LITERATURE**

In preparing for this project, there were a numerous pieces of literature and other sources that influenced my thinking. Below I have provided the most essential resources that informed my thinking.

### **Why Creativity?**

Creativity is a vital aspect of everyday life whether people recognize it or not. If it wasn't for creativity, there wouldn't be advanced civilization, including inventions from fire to the IPOD. There are many well-known scholars who agree that creativity is an essential aspect of a formal education. Fisher and Williams (2004) stated that, "Creativity is central to improving the functioning and development of society and of schools" (p. 11). I strongly believe that it is up to current and future educators to thoroughly integrate creativity and creative tools and techniques in our students' education. Torrance (1970) argued, "It now seems that many important things, though not all can be learned more effectively and economically in creative ways rather than by authority" (p. 1). Not only should the children be taught in a creative way, but should also be instructed on how to use deliberate creative tools and techniques within the classroom. Fisher and Williams (2004) had indicated that:

The challenge for schools and social institutions is clear: the focus of education must be on creating people who are capable of thinking and doing new things, not simply repeating what past generations have done, but equipped for a world of challenge and change. (p. 11)

Clearly, it is vital for children to learn how to do novel things on their own, rather than following in someone's footsteps. It is the teacher's responsibility to balance the teacher and facilitator role. Ultimately, this is the goal of educators today.

When people hear the word “creativity” many unique thoughts may arise. There are several scholars who believe that creativity is an essential aspect of a child’s life and that school plays a vital role. According to Robert Fritz (1984), “The most important developments in civilization have come through the creative process, but ironically, most people have not been taught to be creative” (p. 11). Clearly, children need to be taught *how* to be creative, which will enable them to become innovative, enterprising and capable of leadership to equip them for their future lives as workers and citizens. Furthermore, creative students lead richer lives and make a valuable contribution to society. E. Paul Torrance, a seminal thinker in the field of creativity in 1976 called attention to the importance of preparing students for the unknown through the development of creativity. He argued:

Because of rapid worldwide changes, today’s children will live as adults in a world vastly different from today’s. The occupations in which they will engage do not even exist; their work will require abilities, skills, and information yet unimagined. Dangers of future shock are serious. If a person does not rehearse future emergencies, he is going to be surprised and the surprised person is likely to be a dead one. The secret of preparing for the future lies in trying to surprise ourselves, and we do this by imagining, exploring, and rehearsing both imaginable and the unimaginable.

(Torrance, 1976, p.117)

Sir Ken Robinson (2006) contends that “Creativity now is as important in education as literacy, and we should treat it with the same status” (n.p.). Moreover, Robinson challenges the way children are being educated and believes that teachers are educating people out of their creative

capacities. Creativity skills therefore should be introduced to children in their earliest stages of education in order to instill them into their lives and prepare them for their future endeavors.

### **Torrance Incubation Model**

Additionally, there is a model that I like to follow while teaching. E. Paul Torrance is known as “The Creativity Man” and is perhaps one of the most prominent scholars of creativity. He conducted a variety of studies exploring the teaching and learning of creativity. He identified specific skills associated with creativity, and demonstrated success in the teaching of creativity through his Incubation Model of Creative Teaching and Learning. Later referred to as the Torrance Incubation Model (TIM) by Dr. Mary Murdock, TIM (See Figure 7) is a very effective model to use in the classroom. When students are intrigued in a lesson and their learning, it benefits not only the teacher but the students as well. This is exactly what the TIM does; it starts by heightening anticipation which gets the students curious and engaged in a lesson or skill. Next, the students deepen their expectations which give them a deeper understanding of what is being taught and allows them to “dig in deeper”. Lastly, it is more important to extend the learning and have the students leave wanting to know more and extending their learning outside of the classroom.

### **Heightening Anticipation**

The first stage is designed to adequately and mentally prepare the student (or students) for the project ahead. Torrance describes this as a “Warming up Period” with the following six functions:

1. Create the Desire to Know
2. Heighten Anticipation and Expectation
3. Get Attention

4. Arouse Curiosity
5. Tickle the Imagination
6. Give Purpose and Motivation

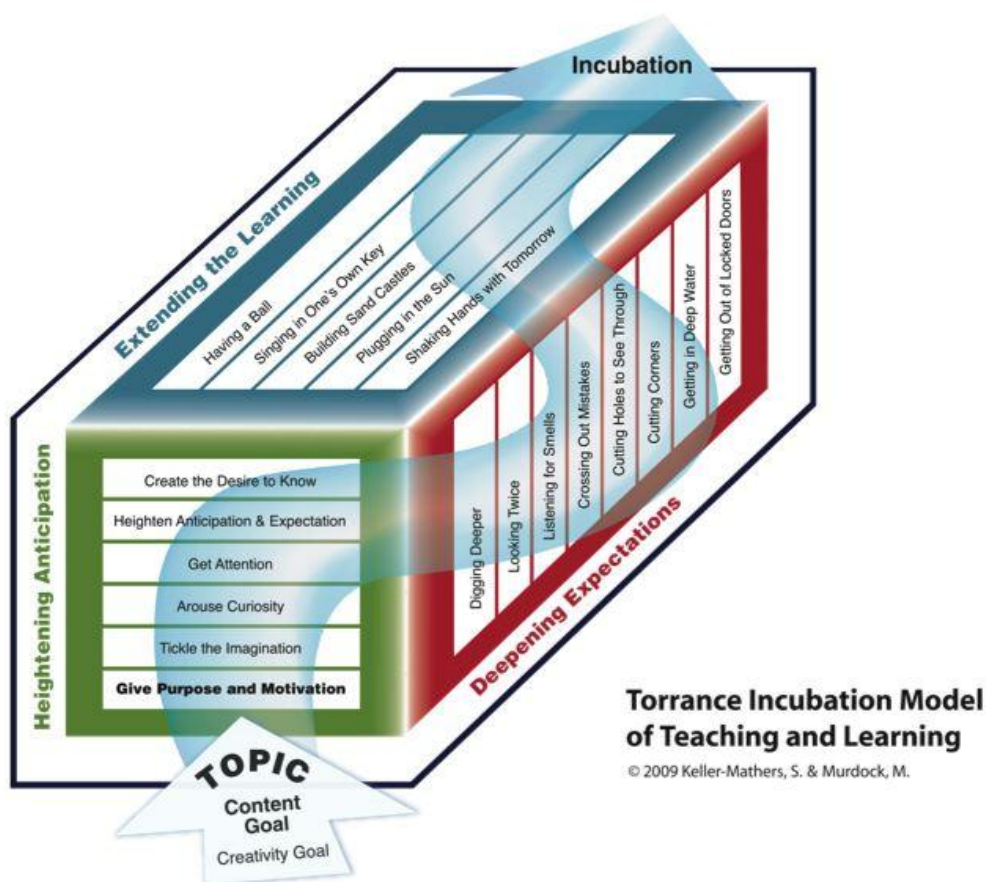
This stage is labeled on the visual in green

### **Deepening Expectations**

This second stage is where the problem is defined, applied, and the creativity is nurtured. Lists of actions or metaphors communicate the development process. For example, “Digging Deeper” is an action that encourages students to go beyond the surface of the problem (identify the unknown), discover things that were missed, synthesize the information, and begin to come up with solutions and actions that can be applied to the project. This part of the model is labeled in red.

### **Extending the Learning**

This stage consists of another list of metaphors that encourages students to take the lead and apply the project in a real context to extend their learning. For example, “Building Sand Castles” is a metaphor that challenges students to use their imagination and discover ways to extend the project to the real world. Extending the Learning can also take place somewhere besides the classroom such as at home. This part is demonstrated in blue.



(Used with permission of authors)

*Figure 1.* Torrance Incubation Model. This figure displays the model in greater detail.

If you are interested in learning more about how the Torrance Incubation Model works within a lesson, a sample lesson plan that I created utilizing TIM is in Appendix B.

Additional resources that informed my thinking included dialog with several individuals. Dr. Susan Keller-Mathers, a creativity expert with experience teaching elementary students provided information and materials to me on specific ways to use CPS tools with children. A visiting scholar at the International Center for Studies in Creativity, Asli Yildirim was very helpful in regards to choosing which tools would be most important to introduce to young



children. Through these resources, I was able to highlight the key concepts and important tools that would work best the age groups I work with.

### **Importance of Project**

This project is important because it allows students to effectively identify the outcomes of using CPS tools with work or problems that they are responsible for. The students are given the opportunity to experience numerous CPS tools and decipher ways in which to use each tool. The students are also provided with the divergent and convergent ground rules that give them a better understanding of when to use each type of thinking (Puccio, Mance, Switalski & Reali, 2012). Given that, there are many resources about Creative Problem Solving (CPS) tools that can enhance the level of creativity that occurs in the classroom (Puccio, Mance, Switalski & Reali, 2012).

Alex Osborn (1964) stated that, “The creative type of teaching essentially aims to involve students in creative effort and a widely used device for this purpose is known as group brainstorming” (p. 25).

Students are accustomed to being given a topic to research or being told the type of project that they have to create, but when teachers initiate voice in the classroom and open up ideas to the students, there is much more excitement and ownership over their work. I believe that all children are masterpieces in their own special ways, and the best qualities in each and every one of them can only be honed if the classroom teacher approaches education with creativity in the classroom and only if freedom of thought and speech are encouraged and rewarded. Utilizing CPS tools in the classroom help towards making the classroom a creative learning environment.

## **Philosophical Connections and Expeditionary Learning**

I believe how students learn is just as important as what they learn. Engaged learning is when students are involved in active learning when they read, write, listen and speak to gather information and make connections to everyday life. According to Thinkso Creative (2011), Expeditionary Learning is similar to student-centered learning in a sense that both methods: (1) organize learning around an experiential project-based approach in which students do original research and create high-quality products and (2) they develop critical thinking and problem-solving skills as essential elements of the deep learning that prepares students for success. I have never heard of Expeditionary Learning until the school that I currently work at. I am honored to be part of such an amazing learning experience for all. When I was first offered the job, I had to research the school's philosophy. Expeditionary Learning (EL) immediately caught my interest. It seemed to directly correlate with my personal philosophy and how I believed that education should be. The EL approach highlights the most important aspects of a tremendous education. Their approach is as follows:

Expeditionary Learning schools inspire the motivation to learn, engage teachers, and students in new levels of focus and effort, and transform schools into places where students and adults become leaders of their own learning. We provide a model that challenges students – even those starting with low skill levels – with high-level tasks and active roles in the classroom. This model succeeds in urban, rural, and suburban schools and at every grade level (Thinkso Creative, 2011).

My school has an elected school designer (from EL) who works hand in hand with our school to provide on-site coaching that includes: full staff training, small team coaching sessions,

curriculum planning, presentations to various constituent groups, and ongoing assessment of EL implementation. Almost all of our professional developments are focused and related to EL protocols.

Since my school is different from public schools, I thought that it was perfect for me because I believe that there is more room for innovation and change on an easier level. I began with a tool deck for children so that they have the basics around how to use CPS and certain tools that will help them day to day (See Appendix F for Tool Deck). However, this is just a starting point. I am eventually looking forward to intertwining creativity within EL so that our school's philosophy has a strong focus on both; creativity and Expeditionary Learning.

It is essential to base instruction on project-based learning, where students participate in hands-on work that benefits each individual and more importantly, their character. "Project-based instruction engages children in long-term initiatives. In sustained projects, children participate as inventors and researchers" (Isbell & Raines, 2007, p. 54). This focus is on learning more about the topic, instead of just finding the right answer. Learning Expeditions support critical literacy and address central academic standards of content, while promoting character development and fostering a service ethic. Expeditionary Learning enhances student motivation and engagement through high-level tasks and active roles in the classroom and helps students develop the critical thinking and problem-solving skills needed to succeed in the future. Above all, divergent thinking skills are considered to be at the heart of creativity and Expeditionary Learning encourages divergent thinking. Sir Ken Robinson discussed the decline of divergent thinking in schools where students are taught to know one correct answer.

Divergent thinking isn't a synonym, but is an essential capacity for creativity. It's the ability to see lots of possible answers to a question, lots of possible ways to interpret a

question, to think laterally, to think not just in linear or convergent ways, to see multiple answers, not one. (Robinson, 2009)

Implementing CPS tools within the classroom allows students to focus on divergent thinking rather than just simply convergent thinking.

Essentially, it is the role of the teacher to ensure that students are comfortable in their learning environment. As students are more comfortable with their surroundings as well as other students in the class, they may experience a sense of acceptance within their classroom.

According to Shallcross (1985), “As one feels acceptance of self within the group, so does he or she become more accepting of others and their ideas” (p. 42). The level of comfort and appeal that a classroom entails may seem slightly important, but it actually serves as a vital aspect for fostering creativity.

Since educators are role models for students, it is imperative for them to be positive and have a positive attitude regularly. Shallcross (1985) concluded that:

We are too quick to point out something that is wrong, what improvements could be made, or give helpful hints to speed up the progress. Those early interventions often discourage rather than encourage. The student’s physical private place helps build the emotional support crucial to creative productivity. (p. 15)

When students feel like they are continuously being told that something is wrong or they didn’t do something correctly, it affects their level of motivation to want to correct it and do it the right way. Language comes into play here and also affects how students react. When a teacher tells a student, “You did this wrong and need to fix it”, the students may react in a negative way. I try to advise students of what they could do, using the phrases, “How to...?” or “How might we...?” When students are approached with a strategy that includes positive language, the students may

feel a better sense of repaire with teachers. It helps them feel more comfortable and at ease when teachers are understanding and not always pointing out the negative qualities of their work. On the other hand, when educators tend to focus on what needs to be fixed, they could run into the chance that students shut down and feeling unmotivated as the outcome. Shallcross (1985) had indicated that, “Many children in school, who are convinced they will fail, for any of a myriad of reasons, will not try” (p. 56). Clearly, educators need to focus on positive approaches when teaching since they are role models and more importantly, leaders.

### **Benefits of CPS Training with Children**

Kristen Puccio (1994) examined the effectiveness of CPS training with primary age children. I selected her work because it gave me another perspective to my project since they are similar. Her purpose was to engage primary age children in real life problem solving using CPS. Through her study, she found that primary children do in fact experience real problems and it is beneficial to utilize deliberate CPS process and tools during instruction. Ultimately, this research study helped connect the work of my project to Puccio’s project as both are interested in the same theory.

### **Summary**

This section discussed the reasons why creativity, more importantly CPS tools, should be introduced and encouraged in the classroom through a reflection on key literature and resources. The first part of the section demonstrated the answer to the question that most people ask, Why Creativity? The next section pertains to the importance of the project and how creativity benefits children. The third section demonstrates my personal philosophy of education and how it correlates with the importance of creativity. Then, I went on to display the similarities between

our current philosophy and what I hope for it to become. Lastly, the fifth section includes a relevant research study that connects to my work.

### **Selected Bibliography**

Additional literature that informed my thinking include:

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### **SECTION 3: PROCESS**

This section includes my personal learning goals and outcomes of the project. It also includes a timeline of the implementation of the project.

#### **Rationale**

Since I am a Building-Based Substitute at a school, I knew it would be beneficial to include as many different grade levels as I could in my project. It also provided an opportunity to introduce new tools in different classrooms in order to spread the word and allow as many students to become familiar with the terminology and practice specific tools. Additionally, it allowed for more teacher feedback and participation. Teaching in different classrooms in my role as the building level substitute allowed for various teachers to experience the CPS tools I implemented and benefit from it. I collected information and feedback from the various sources including the classroom teacher, administrators, and the students themselves.

I began by making a list of the most popular and useful CPS tools for use with the students. The tools introduced in this project included Forced Connections, Idea Box, Stick 'em Up Brainstorming, Brainwriting, PPCO, and Card Sort (Miller, Vehar, Firestien, Thurber & Nielsen, 2011). These tools are a good set of basics for age levels that I work with. The students' usefulness was captured based on their feedback and enthusiasm throughout the experience.

#### **Personal Learning Goals and Outcomes**

The project began on February 11<sup>th</sup>, 2013 and involved students of all ages (grades 2-6) at my school. All photos that were used of students are used with permission of parents and the school. One personal learning goal included creating a desired template of what a tool deck for children looks like. This tool deck included information on specific tools and included examples

of how to use the tool. Another goal was to ensure that students understand the importance of each tool introduced to them, so that they can use the tool independently. More importantly, I hope to leave a lasting effect on students and the importance of using creativity on a regular basis. In the future, I want students to be able to use a tool on an independent basis without having to think about why they are using it or how it would help.

I had a lot of support from the teachers and the administration at my school. The teachers who participated in the experience understood the commitment and were willing and prepared to assist me. I also reached out to my Sounding Board Partner (SBP) Donna Crossman who is also an educator at a different charter school in the area throughout the implementation of the project. She had great expertise and advice to offer based on her own experience using CPS tools with her own students. I also continued to seek advice from those with experience and experts in implementing CPS tools in the classroom. I couldn't feel more inspired and supported by many interested people in my professional and personal life.

### Project Timeline

Week of:	Tasks:	Estimated time commitment
Pre-work that began last semester	<ul style="list-style-type: none"> <li>Meetings with Sue discussing ideas about project</li> <li>Meetings with Asli</li> <li>Conversations and communications with Cyndi about project details</li> <li>Introduced Idea Box and Forced Connections to a 6<sup>th</sup> grade class</li> </ul>	20 hours
Jan. 21 <sup>st</sup>	<ul style="list-style-type: none"> <li>Skype meeting with advisor and SBP</li> <li>Review my goals and course expectations</li> <li>Start work on concept paper</li> <li>Draft concept paper</li> <li>Develop specific tools that I want to use for project</li> </ul>	30 hours
Jan. 28 <sup>th</sup>	<ul style="list-style-type: none"> <li>Send concept paper to SBP for feedback</li> <li>Make edits and revisions to concept paper</li> </ul>	6 hours
Feb. 4 <sup>th</sup>	<ul style="list-style-type: none"> <li>Concept paper road map draft due</li> </ul>	5 hours
Feb. 11 <sup>th</sup>	<ul style="list-style-type: none"> <li>Concept paper road map final due</li> </ul>	10 hours



	<ul style="list-style-type: none"> <li>Introduce and document Idea Box and Forced Connections to a second grade class</li> </ul>	
Feb. 18 <sup>th</sup>	<ul style="list-style-type: none"> <li>No school; President's Day</li> <li>Prepare other tools for various age levels</li> </ul>	4 hours
Feb. 19 <sup>th</sup>	<ul style="list-style-type: none"> <li>Introduce and document Brainwriting, Stick 'em Up Brainstorming and Forced Connections to a fifth grade class</li> </ul>	4 hours
Feb. 25 <sup>th</sup>	<ul style="list-style-type: none"> <li>Introduce and document PPCO to a sixth grade</li> <li>Work on draft of sections 1-3</li> </ul>	4 hours
March 4 <sup>th</sup>	<ul style="list-style-type: none"> <li>Introduce and document Card Sort to a fifth grade class</li> </ul>	15 hours
March 11 <sup>th</sup>	<ul style="list-style-type: none"> <li>Introduce and document Idea Box and Forced Connections to another second grade class               <ul style="list-style-type: none"> <li>Sections 1-3 due</li> </ul> </li> </ul>	20 hours
March 25 <sup>th</sup>	<ul style="list-style-type: none"> <li>Introduce and document Stick 'em up Brainstorming and Forced Connections to a fourth grade class</li> <li>Brainstorm ideas for tool deck</li> </ul>	10 hours
March 29 <sup>th</sup>	<ul style="list-style-type: none"> <li>No school; Spring break</li> <li>Reflection thus far</li> <li>Receive documentation from teachers by this point</li> <li>Work on draft of section 4-6</li> <li>Begin putting together tool deck</li> </ul>	15 hours
April 8 <sup>th</sup>	<ul style="list-style-type: none"> <li>Gather reflections, documentation and feedback from all participants</li> <li>Work on tool deck</li> <li>Finish sections 4-6</li> </ul>	25 hours
April 15 <sup>th</sup>	<ul style="list-style-type: none"> <li>Arrange conferencing and discussion with Sue</li> <li>Skype with SBP for feedback</li> <li>Finish final touches on paper</li> <li>Take tool deck to FedEx and have printed and laminated</li> <li>Work on presentation</li> </ul>	30 hours
May 2 <sup>nd</sup>	<ul style="list-style-type: none"> <li>Sign off on project and final revisions</li> </ul>	5 hours
May 9 <sup>th</sup>	<ul style="list-style-type: none"> <li>Project presentations and final project submissions</li> </ul>	2 hours
May 16 <sup>th</sup>	<ul style="list-style-type: none"> <li>Submit digitally in Digital Commons</li> </ul>	30 minutes

## **SECTION 4: OUTCOMES**

### **Introduction**

Thinking about the outcomes of the project made me think back to when I began the Creative Studies program. Right off the bat, I was so interested in learning how to make more engaging lesson plans, teach students creatively and creativity, and tying in that mystery piece that sets the tone of each lesson. Not only have I learned how to motivate learners and make learning more engaging, but I have also learned much more about myself as a person. I was also very excited to create a new product that can be useful for my colleagues and more importantly the students.

Suppose a magician is coming into a school to perform magic tricks, it is essential for him to know his audience. The magician would need to know whether he is performing for young children or an older high school group because the material in which he brings would be much different. The same goes for teaching. It is vital for teachers to get to know their students on a personal level and be able to identify their strengths and weaknesses. Teachers should also take in account their preference for learning. Over the years, I have come across students who prefer learning with pictures and objects (visual learners) and some who prefer PowerPoints and a lot of words. Knowing your students allows you to deepen the learning by providing each student with the necessary tools and techniques that will help them on an individual level.

Since I know the majority of the students at my school on a personal level, I was able to choose what I thought was the best tool for each particular age group. Before I began working on the project, I was able to identify which tools I would introduce to the various grade levels. There were a few tools that I chose to introduce to both a primary and a secondary grade based on its importance and easiness to understand.

### **A Range of Products**

There are specific outcomes of the project. I was able to provide them with a tangible product that they will be able to use throughout the entire year in order to help them solve problems in the form of a tool deck. Through this project, I have also deepened my learning about the appropriate tools and techniques necessary in order to be a successful teacher. Therefore, the products included in this section are diverse and include both tangible products such as the Tool Deck entitled *CPS Tool Deck for Children* as well as more intangible outcomes such as improvements in my understanding of students.

I was also held accountable for a reflection of the process and include documentation of student practice and experience. This allowed me to make any necessary changes to the tool deck after properly reflecting on the strengths and weaknesses. Additionally, I provided specific feedback from various teachers, administration, as well as the students involved. The feedback from the teachers and students allowed me to polish the implementation and description of the tools included in the tool deck. Feedback from my administrators assisted with providing for the opportunity for them to see how important creativity is to this generation of youth.

### **Engaging Learners**

It was a goal of mine to engage the learners from the very beginning. Every time I teach a new topic or content, I try to get the students hooked first. I believe that if you have the students interested from the very beginning, they will most likely stay interested and benefit from what is being taught because they are motivated to want to know more. There are numerous techniques as an educator to utilize in order to engage learners.

As simple as it sounds, the teacher's personality and level of enthusiasm plays a huge role in the interest and engagement of students. As a student, I recalled the most information from

the teachers who were fun, wild and enthusiastic while they taught. As soon as they interested me in the beginning, I was hooked throughout the lesson. Each time I went into the various classrooms to introduce a CPS tool, I made sure that I was very enthusiastic and excited about what I was about to teach them. If I am not excited about it, how am I supposed to expect the students to be? I noticed that each time I went into the classrooms (across all ages); the students were extremely focused and couldn't wait to see what happened next. When I was in a fourth grade room introducing Stick 'em Up Brainstorming and Forced Connections for example, I noticed the students who don't normally participate as often or the misbehaved students were just as involved and focused on the learning. One of those students actually asked me at the end of the lesson if I could do another similar activity like this during Fun Friday. My school has Fun Friday every Friday from 3:00 to 4:00. This serves an incentive for the students to do well all week. Each classroom participates and does something 'fun'. For example, there is movie and snack, games, Wii and computers, dance, arts and craft, etc. So when this student asked me, I was completely shocked to say the least. Especially coming from the student that it did, it really meant a lot and showed me how much he benefitted from the experience. To me, this was one of the largest 'AHA' moments that I've had! This is one of my ultimate goals; to make learning fun, and clearly its working! Across the board in many of the classrooms I was able to be in, I've received many similar reactions to the lesson. These students are not accustomed to this type of learning which has made me realize how much I need to work with the staff at my school.

As I mentioned in Section Two, I consistently utilize TIM within my teaching. I followed the principles of the model in engagement of students in order to heighten their anticipation before introducing a CPS tool, deepened their expectations throughout the lesson and extended the learning after I introduced each tool.

One of the outcomes of this project included my experiences implementing both divergent and convergent tools. The next section includes what occurred, student reactions and a written and photo documentation of the varied experiences.

### **Divergent Tools**

In this section, I have included the divergent tools that were introduced to students. These tools highlight the importance of deferring judgment, seeking wild and unusual ideas, striving for quantity, and building on other ideas; as discussed in Section Two (Miller, Vehar, Firestien, Thurber & Nielsen, 2011, p. 22). Every time that I presented a divergent tool, the students were introduced to the ground rules for this type of thinking which I believe helped with their overall outcome of ideas.

For each classroom that I went in to, I made sure that I began by discussing some ground rules with them. For example, I advised the students that they would be provided with some objects that would assist them in the activity. These objects included play-dough, rubber balls, pipe cleaners, etc. It was essential to explain the objects' importance first so that they were aware of my expectations before I began. I was very clear that if they were too focused on playing with their object and couldn't use it respectfully, then it would be taken away from them. As an educator, it is vital to model the appropriate behavior and explain the expectations and guidelines before beginning. This prevented any misbehaviors as well as having to stop in the middle of an activity in order to explain the proper behavior.

### **Forced Connections**

I have had the opportunity to work with both a primary and secondary grade for this particular tool. I thought that this was an important divergent tool that would be beneficial for both age groups to learn and be comfortable using. I used this with a second grade class in

conjunction with the use of Idea Box and with a fourth grade class while I introduced Stick 'em up Brainstorming. I thought that it would be interesting to use Forced Connections with two other different tools in order to receive diverse reactions.

The fourth grade class was much more interested in the effects of this tool, whereas the second grade class had a difficult time making the connection to each visual represented to them. It was definitely more challenging for the younger students to understand the importance of this tool and what the pictures were trying to help them with. The second graders were utilizing another divergent tool called Idea Box in order to help me create the best movie and when they were slowing down coming up with ideas to complete the chart, I showed them a few pictures. Unfortunately, I had to give them an example of what I meant first when I first introduced it. For example, I showed them a picture of David Beckham and I said that he could be a character in my movie (See Figure 2).



*Figure 2.* Second grade. This figure illustrates students' raising their hands with ideas right after viewing a photo of David Beckham.

After I provided them with an example, they began to better understand the concept and then they brainstormed numerous ideas for who the characters should be. The Forced Connections tool did end up helping them with the number of ideas that were generated. However, I believe that it was easier for the fourth graders to understand this tool based on the additional tool used with Forced Connections. The fourth graders were being introduced to Stick 'em up Brainstorming and were coming up with a bunch of ideas to help me get a black bear out of my cabin, so this tool was very beneficial for the type of problem they were working on. The older students benefited from using this tool and didn't even know that it was a separate tool until we debriefed the session. One of the fourth graders also stopped and asked, "Miss Lyness is it okay if we look around the room to get ideas too?" I was shocked when he asked me this and was very excited because now I know that when they are stuck on something, they will use their surroundings to help them brainstorm more ideas.

Furthermore, I was fortunate enough to utilize Forced Connections with the fifth grade class that I was in as well. They enjoyed the tool and thought that it was very helpful in order to get them started. For example, when I displayed a picture of a buffet, one of their ideas consisted of eating healthy. Clearly, this age group understood the tool in its entirety.

I have feedback from this second grade class, but I am going to include it in the next section when I discuss the divergent tool, Idea Box.



*Figure 3.* Fifth grade. This figure shows me using Forced Connections in order to solve the challenge, “What are all the ways to get prepared for the NYS tests?”

### **Idea Box**

Idea Box is another divergent tool that helps students come up with several various combinations of different ideas in order to solve a problem. Both age groups had fun with this tool and enjoyed participating. I was able to introduce Idea Box to a second and sixth grade class. I created a different problem for both grades that I thought would be more meaningful for their age. The problems were similar because I needed a problem that I could have the students brainstorm ideas for several different categories.

For the sixth grade group, I displayed the problem, “How might I create the best children’s book?” They were very interested in the sub-headings that I created prior to the experience and were immediately hooked to the learning. I was very enthused when I was telling them the history of why it was important for me to work on this problem and my level of excitement definitely affected them and their anticipation. It was stimulating to recognize the level of participation with this group of students. Since I have substituted in this particular



classroom before, I had the benefit of knowing the students on a more personal level and I was amazed with the level of motivation that this group had during this experience. Normally, it can be challenging for this group of sixth graders to be thoroughly focused in the content being taught but it was vividly obvious of their level of excitement. It was clear to me because the group was generating so many ideas that I had to actually stop them and move on to the conclusion and debrief of the activity for the sake of time.

Additionally, I was very pleased with their behavior utilizing the objects provided. According to the feedback that I received from this group, many students benefited from having these objects available to them. This proves the notion that students should enjoy learning by the use of play. Playfulness is an essential aspect of creativity and I believe is useful and essential in all ages. As Dr. Stuart Brown (2009) has stated, “Humor, games, roughhousing, flirtation and fantasy are more than just fun. Plenty of play in childhood makes for happy, smart adults – and keeping it up can make us smarter at any age” (n.p.). Stuart Brown’s research shows play is not just joyful and energizing – it’s deeply involved with human development and intelligence.





*Figure 6.* Sixth grade. This figure represents the Idea Box from sixth grade.

I thought that this was important to incorporate because it really shows a diverse range of ideas across the board. The students truly let their imagination run wild in order to assist them in completing this chart. For example, a few of the characters that they brainstormed included King Tut's grandson, Little Bill (whoever that is) and a Jamaican monkey with dread locks – if that doesn't say imagination then I don't know what does! This helped set the tone of the exercise because students were already thinking of the wild and unusual ideas. Again, this brings me back to the importance of going over the divergent ground rules before beginning.

Furthermore, I had a similar reaction to how I felt with the sixth graders, when I introduced this tool to two different second grade classes. Not only was this group excited throughout the activity, but it was difficult for me to stop them, once they started diverging. At this age, everyone wanted a turn to state their number combination and what it represented. Some of the variations were so funny that the students were just having fun listening to their peers' responses and ideas for creating the best movie. I noticed their use in the divergent ground rules because so many students were building off of each other's ideas. Based on the reactions from the second graders and their teachers, everyone was very pleased with the outcome of the experience and the level of student engagement throughout the entire process.





*Figure 8.* Second grade. This figure represents some of the ideas that one second grade class brainstormed.



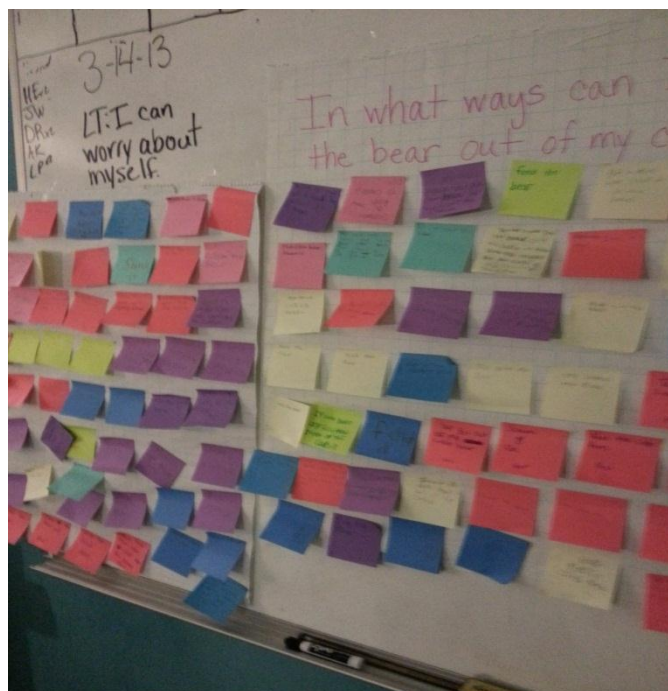
*Figure 9.* Second grade. This figure shows the other second grade class participating and actively diverging.



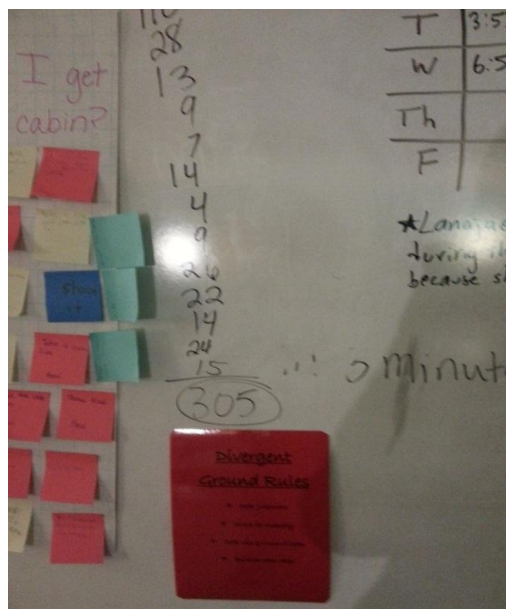
*Figure 10.* Second grade. This figure displays the beginning steps of completing the Idea Box. The diverging has begun and the hands are high.

### Stick 'em Up Brainstorming

Stick 'em Up Brainstorming is a very popular and powerful tool when it comes time to diverging. The importance of this tool is that each student is able to participate at once and they write down one idea per post-it note and say it aloud so everyone can hear. This tool can be so powerful because this really highlights the rule of building on other ideas. It is easy for a child to hear an idea that their classmate said and build off of that. This tool was introduced to a fourth grade class. The assistant principal was also fortunate enough to be able to observe this lesson so I have received feedback from her as well (See Appendix E). The students were first advised of my expectations during the activity. I went over the guidelines for divergent and convergent thinking and discussed each type's importance. This particular group of students seemed extra motivated to want to help me solve this problem. This makes me think that they are not accustomed to using objects or manipulatives throughout their learning.



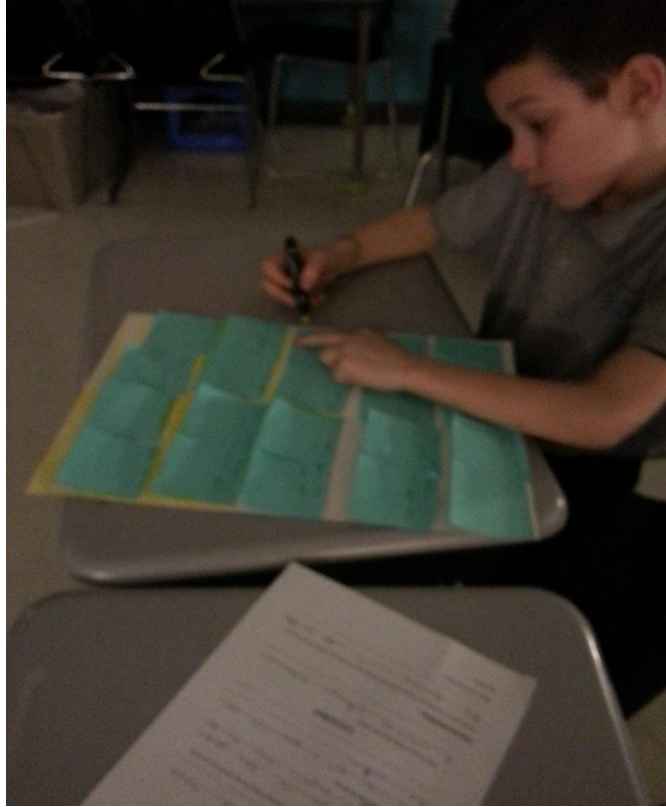
*Figure 11.* Fourth grade. This figure shows the amount of ideas that fourth graders generated.



*Figure 12.* Fourth grade. This figure shows the total number of ideas that fourth grade generated. (305 ideas in three minutes)

Due to the fact that I couldn't even fit all of the post-its on the board, I add to count up how many ideas the students had with them at their seat that didn't even make it up to the board. As you can see, this group brainstormed 305 ideas in three minutes.

I was very impressed with the amount of ideas brainstormed especially considering this was the first time that this class had experienced this tool. Below is a picture that represents a student who normally chooses not to participate much and rarely stays on task as far as behavior goes.



*Figure 13.* Fourth grade. This figure represents a student who specifically asked me if he could keep his ideas that he generated as a reminder of the learning!

I thought including this picture of this student was vital because he normally has a difficult time staying focused. This activity gave him the freedom of speaking out of turn without raising his hand and participating in an engaging activity. He is the same student who asked me to conduct a similar activity during a Fun Friday. It is these types of students that I am thankful that I can reach out to and interest in the learning. I also particularly enjoyed reading his feedback which I also shared with his teacher in order to give him insight on this student's learning style and preference. As I stated prior, I could not fit all of the ideas on the white board so I thought for a better understanding of displaying how many ideas were created, I would include the following powerful visual.





*Figure 14.* Fourth grade. This figure displays the additional ideas that I collected from students who couldn't fit their post-its on the board.

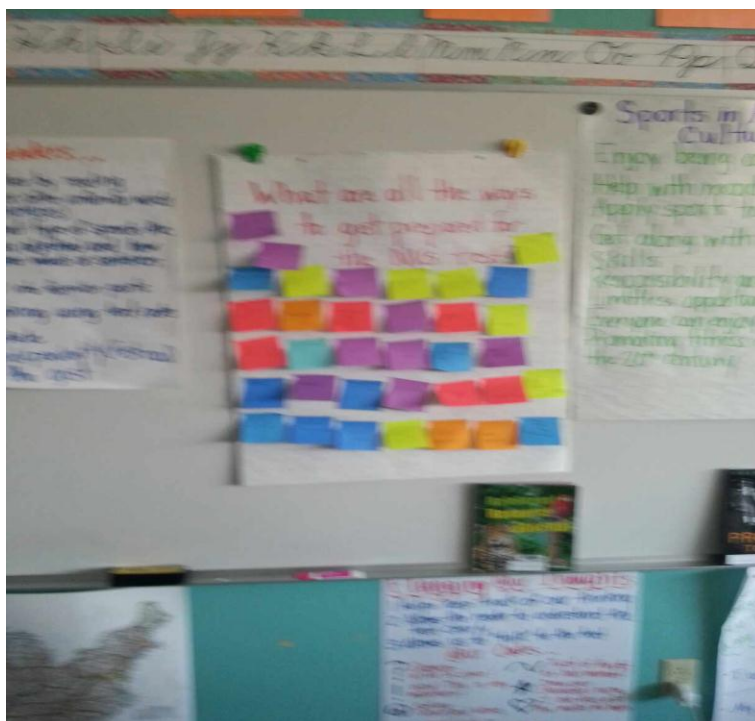


Figure 15. Fifth grade. This is the first poster that they filled up in less than one minute!



Figure 16. Fifth grade. This represents all of their ideas after another minute.

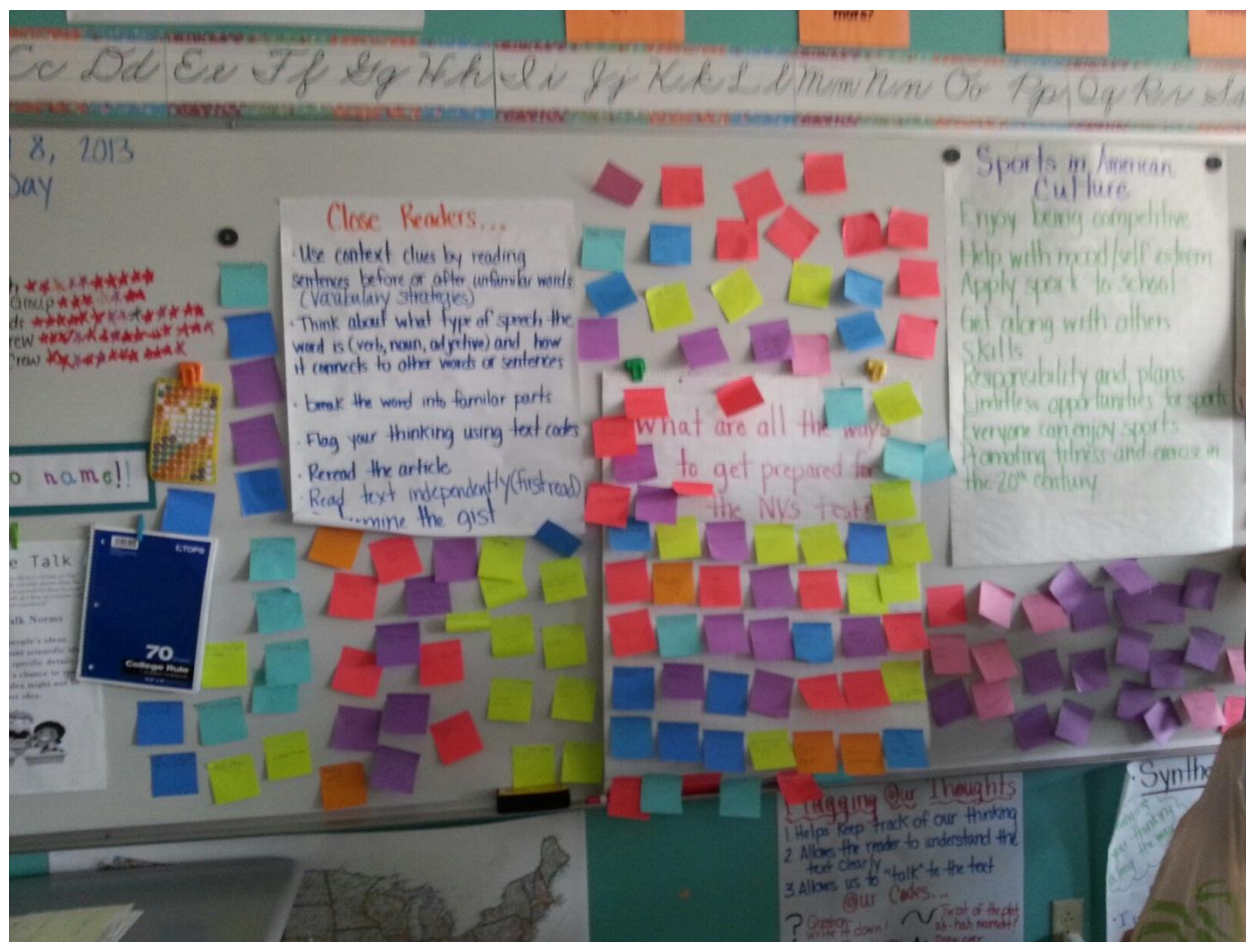


Figure 17. Fifth grade. This represents all their ideas that were generated not including the ideas from the Brainwriting forms!

### Brainwriting

Brainwriting is a powerful divergent tool that can be used when a group is slowing down and may be in need of quiet time to think deeper. In Brainwriting, there are pre-made sheets containing 9 post-it notes per page that the group shares. I introduced this tool to a fifth grade class after I first introduced Stick 'em up Brainstorming. When the group was slowing down, I pulled out the Brainwriting sheets and advised the students to write down their ideas silently, fill an entire row and then hold the sheet in the air to switch. This can be such a powerful tool



because the students have the time to look at the previous listed ideas and build on other ideas stated. The fifth graders seemed to enjoy this activity and came up with several ideas to help them prepare for the New York State tests. Since the state assessments are coming up in the next few weeks, I thought that it would be beneficial to work on a problem that benefits them on an individual level. The challenge statement was: “What are all the ways that I can get prepared for the NYS tests?” I was very impressed with this group of students and the number of ideas that were generated in only 3 minutes. They produced a total of 365 ideas between using Stick ‘em Up Brainstorming, Brainwriting and Forced Connections. They were extremely motivated throughout the entire experience and according to the feedback from the students; they enjoyed the activity and what it entailed.

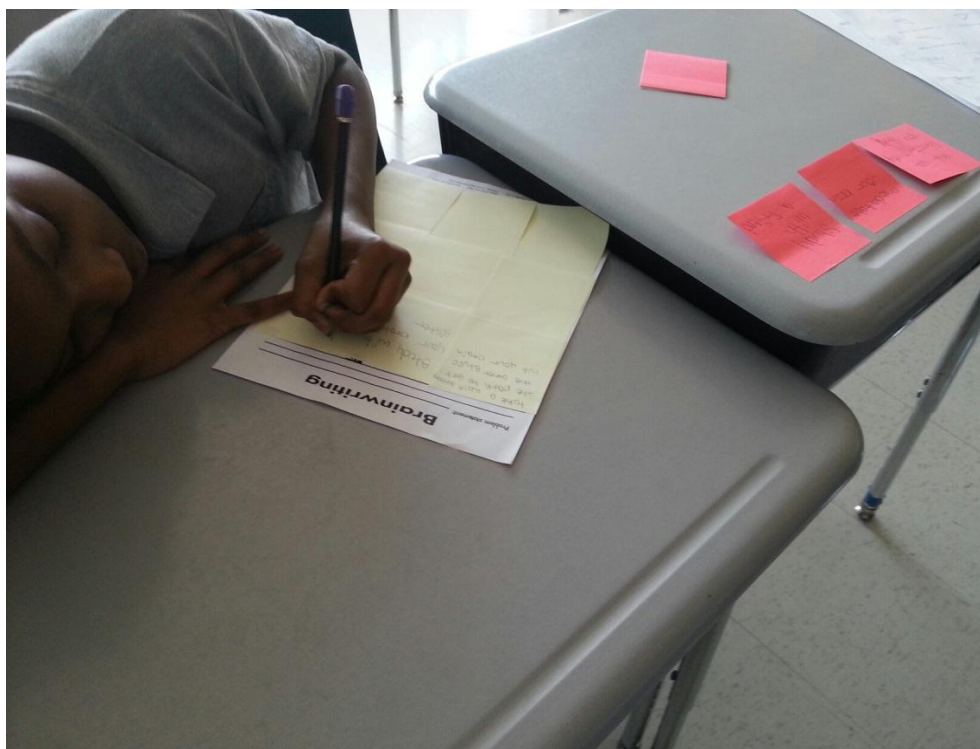
Some of the ideas that were generated on the Brainwriting forms included: going to bed early, relaxing, eating a healthy breakfast, studying vocabulary words, writing down notes, practicing writing an essay, practice math facts, etc. Clearly, these are all important ideas that would help them prepare for the tests, but my focus was around the wild and unusual ideas that they came up with. Some of them included: walk around to clear your mind, take a shower, show NYS who’s boss, get brain food, go to Wal-Mart, compromise, go sledding, go to the mountains, and have fun and block things out, are just naming a few. I believe that if I wouldn’t have utilized this tool when asking this question, I would not have received the same sort of ideas. But, because I went over the divergent ground rules in the beginning of the lesson, they were able to seek pass the ‘normal’ ideas and think of crazier ideas.

When I noticed a student slowing down while completing a Brainwriting sheet, I had my forced connections binder available for help. I was able to tie in forced connections during this experience as well. I thought that the students would benefit from having a picture there to help

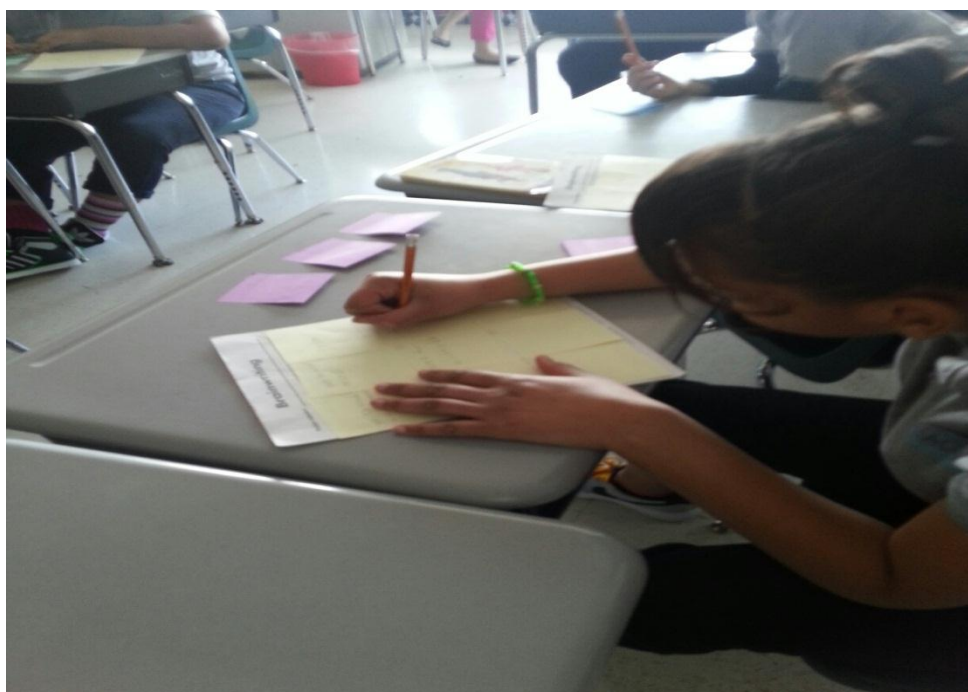
force a connection to an idea. Overall, the students were very supportive of using these tools and came up with a variety of ideas of how and when to use these tools in the future. For more information on feedback from the fifth graders, see Appendix C.

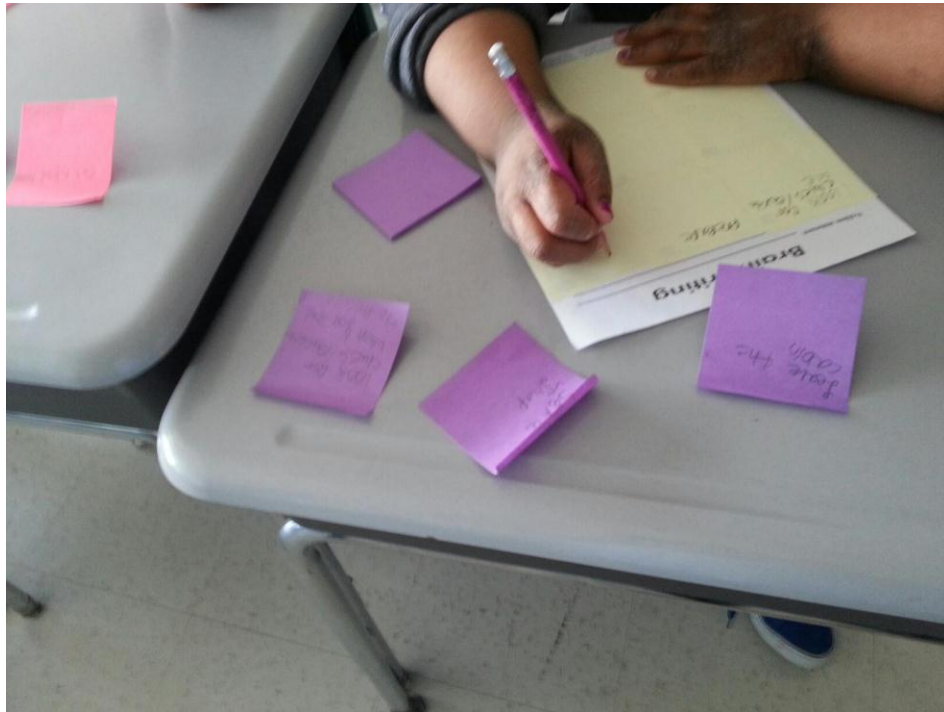


*Figure 18.* Fifth grade. This figure displays some of the fifth graders Brainwriting forms.



*Figure 19.* Fifth grade. This figure shows a student diverging during Brainwriting.





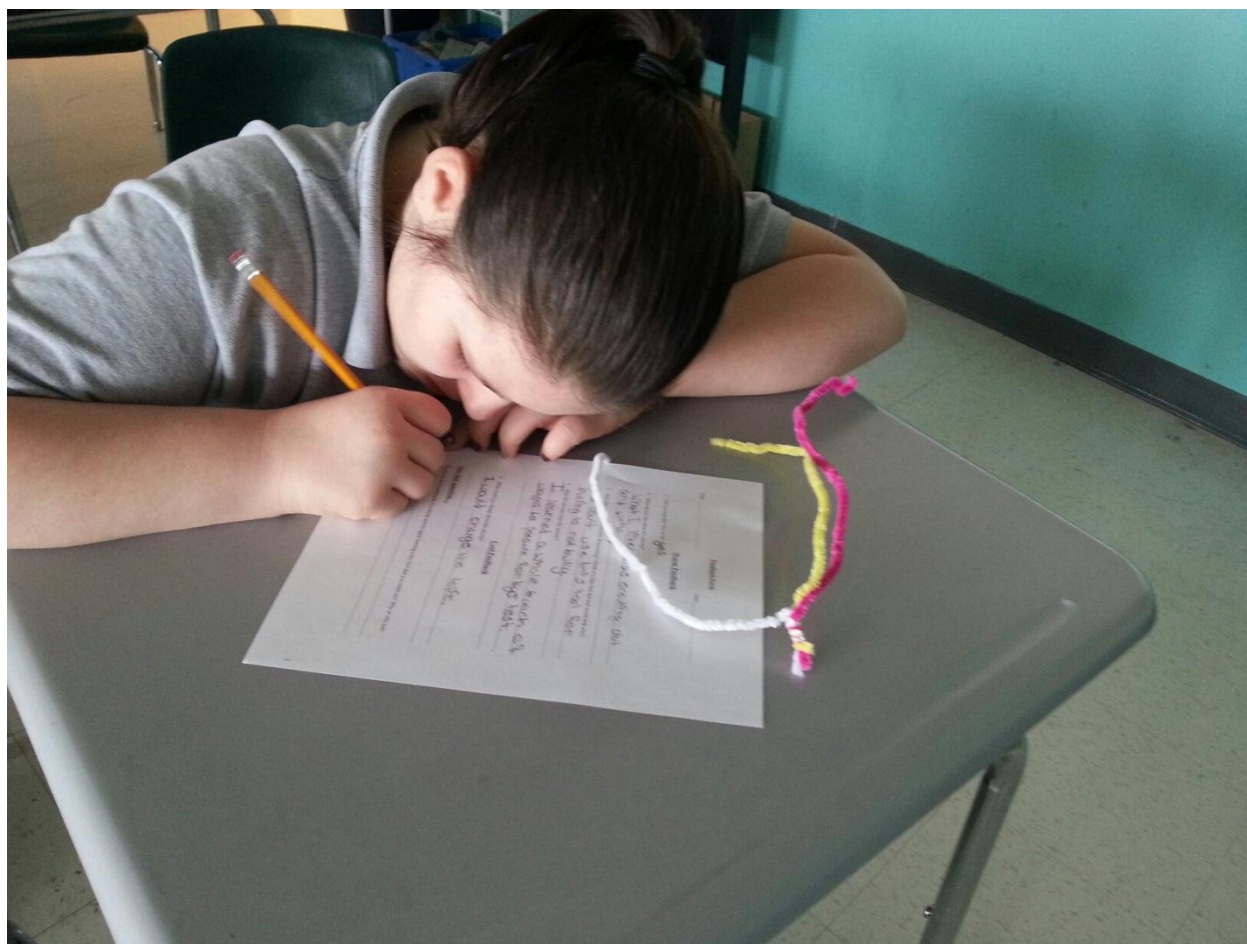
*Figures 20, 21 and 22. Fifth grade. These figures display Brainwriting.*







*Figure 23.* Fifth grade. This figure shows two students who were eager to count up their total number of ideas!



*Figure 24.* Fifth grade. This figure displays a fifth grader completing the feedback form.

### **Convergent Tools**

In this section, I have included the convergent tools that were introduced to students. These tools highlight the importance of being affirmative, deliberate, checking the objectives, improving ideas, and considering novelty as stated in Section Two (Miller, Vehar, Firestien, Thurber & Nielsen, 2011, p. 23). Just like when I presented the divergent ground rules, I also introduced the ground rules for this type of thinking which I believe helped them understand the difference between the two types of thinking.

## **PPCO**

PPCO is an acronym for the tool that consists of Pluses, Potentials, Concerns, and Overcoming concerns. This is a self-assessing tool that enables you to evaluate an activity, lesson, idea, etc. I was verbally able to use this tool with a group of sixth grade students. I could have collected them and used them as part of my documentation but I thought it was more important to have the students hold on to them as a reminder of the tool and as a way to help them in the future. Because of their strong reactions to using this simple tool, they wanted to make sure they remembered the key terms in this tool, therefore it benefitted them to keeping their PPCO's.

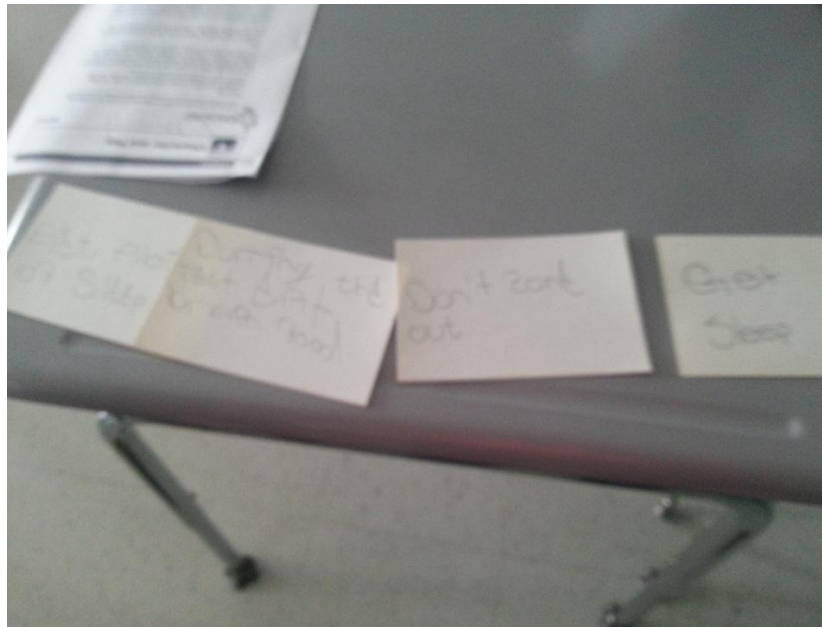
Additionally, I took it upon myself to give my administrators a copy of PPCO as a way to try and initiate the use of it during our evaluations. I thought that this would be a powerful tool for teachers to use as a way of self-assessing themselves after being observed for a formal lesson. Twice a year teachers, substitutes, and teaching assistants are required to conduct a lesson where the principals observe us. Rather than just meeting with the principals after the lesson and having a formal evaluation, I thought that it would be essential to incorporate a CPS tool in order to capture the pluses, potentials, concerns, and ideas for overcoming the concerns based on the lesson. There are some teachers who do not spend much time reflecting on their teaching and I thought this would serve as an important reflection piece for all. This will enable educators to take the time and think about how they can make the lesson better the next time. It will also allow them to generate ideas that would help support the feedback from the administrators. In essence, I am hoping that beginning next year; our principals will begin utilizing this tool as part of their evaluation process.

### **Card Sort**

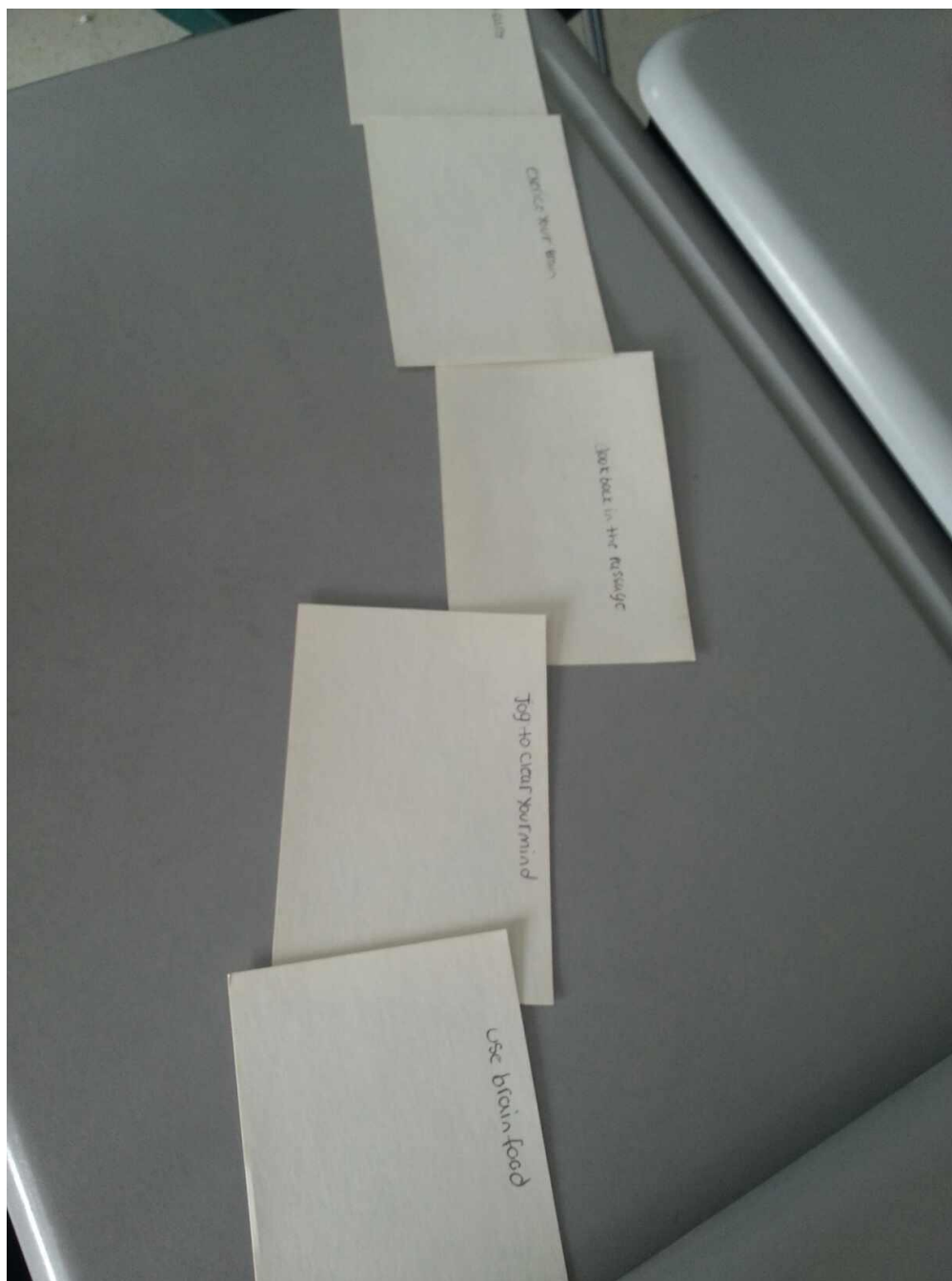
Card Sort is a convergent tool used to quickly rank options. This tool's main focus is to compare and prioritize ideas, solutions and challenge statements. I intended on introducing this tool to a primary grade, but the opportunity aroused for an older grade. I was able to introduce this tool to a fifth grade class. Since we previously worked on the challenge statement, "What are all the ways to get prepared for the New York State tests?" I thought it would benefit the students if we took it one step further and prioritized their ideas. When I first left this particular group of students, they were overwhelmed with the amount of ideas they had to help them get ready for the state assessments. I think they felt burnt out and stunned at how many ideas they had, so I thought it would be crucial to converge ideas and rank them.

First, students were advised to choose only five options or ideas that sparkled or stood out to them. After they chose their five from the list of 365, we began using card sort. The students were instructed to write each of their five options on a separate index card that was provided to them. Then, I asked them to lay the five cards on their desk facing up. The students were then advised to select the option that they liked least and write a five in the corner and set it aside. Once the students had four cards remaining, they were told to pick the option that they liked best and write a one on that card. After they chose their best option, they set that to the right and continued by choosing the next option that they liked the least and wrote a four on it and set it to the left. They continued this process until every card had a number on it. Normally, this tool would be very helpful when you have a lot of ideas (more than 10), but for sake of time, I only had the students use five. Lastly, the students were guided to place the cards in numerical order and that would complete the process.

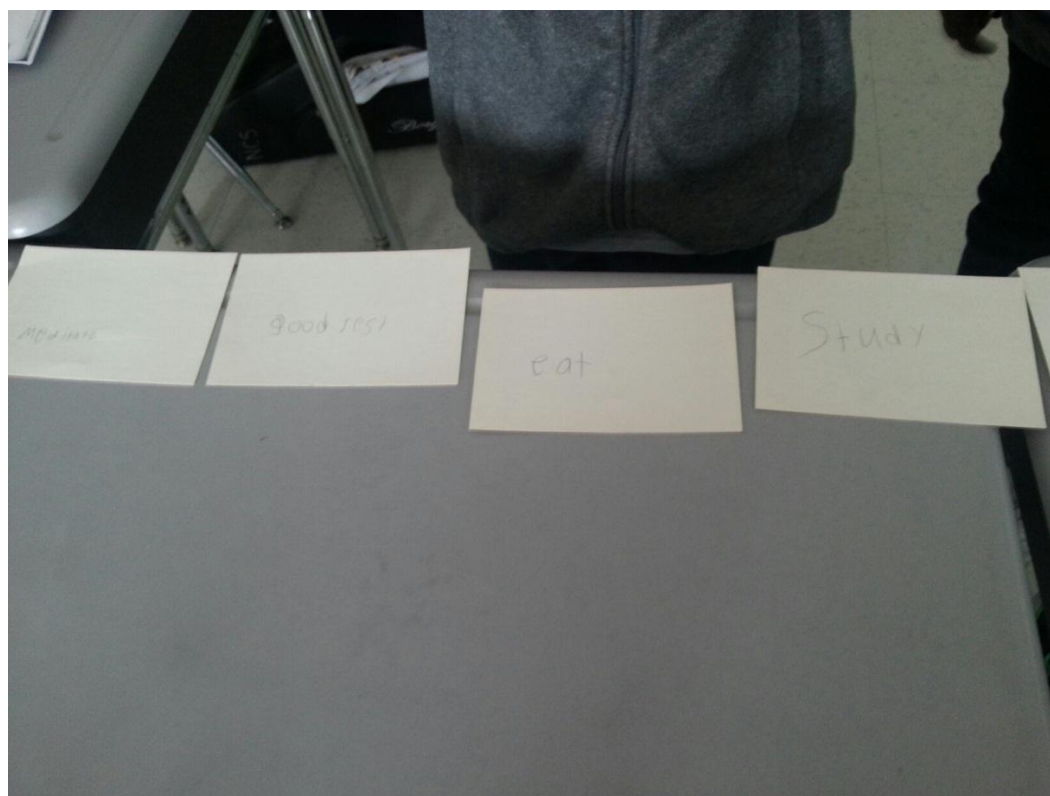
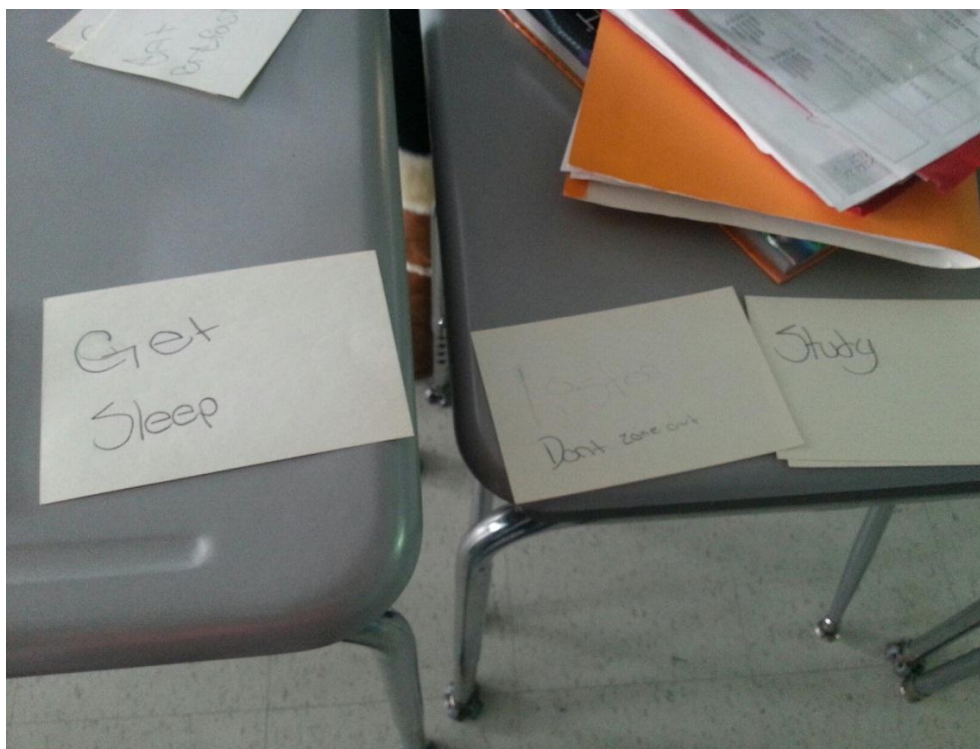
The students felt much relief after being introduced to this tool. Since it is such an easy process, many students suggested that this is something they would feel comfortable doing on their own next time. Obviously, I was jumping for joy when they said this because I know that it helped them prioritize their ideas/thoughts and it is a quick tool that they can do independently.



*Figure 25.* Fifth grade. This figure shows an example of a student who used Card Sort.



*Figure 26.* Fifth grade. This figure shows another example of Card Sort. This student listed using brain food as her 5<sup>th</sup> option.



Figures 27 and 28. Fifth grade. These figures show more Card Sort examples.



### CPS Tool Deck for Children

The tool deck includes a cover page, a page that discusses the importance of the tool deck, divergent and convergent ground rules, each tool that I was able to introduce to a class, and the ways that each tool can be used. I chose to include a visual representation of each tool so that students had a picture to assist them. Each tool also consists of directions on how to properly use it. I thought that including ways to use each tool was essential for two reasons. First, it gives students ideas on how it can be used and second, the usefulness ideas were generated by the students which seemed imperative to include. See Figure 29 for a picture of the finished tool deck. For more detailed pictures of what each page in the tool deck looks like, refer to Appendix F.

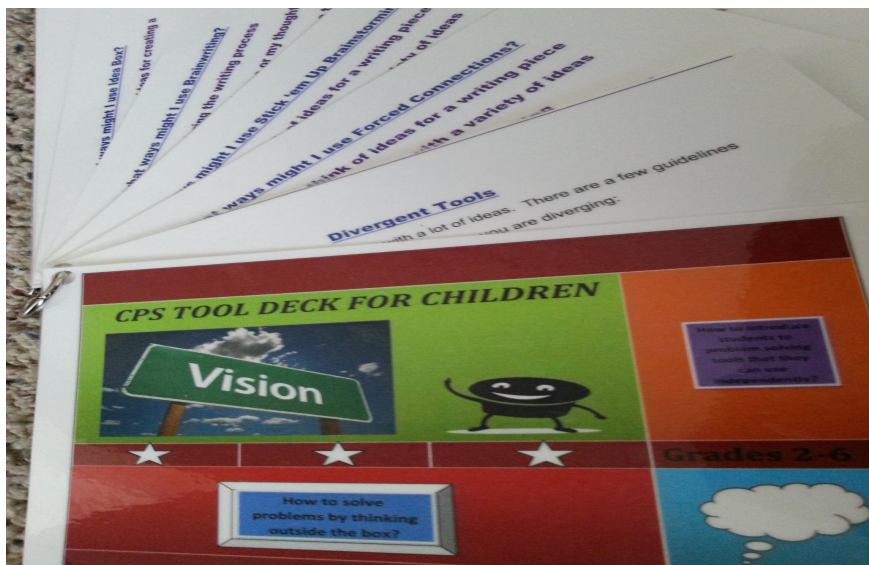


Figure 29. CPS Tool deck for Children. This figure represents a glance of the polished tool deck.

### **Summary**

The key outcomes discussed above focused on the documentation of the students utilizing the various tools and more importantly, how the students reacted to each tool. There was some amazing learning that took place in each grade level that not only affected me, but also affected the students and how they will continue to solve problems in the future. They were introduced to several new and useful ways of solving problems and were eager to learn another tool. I was very happy with how the tool deck turned out as well. Being that the tool deck was one of my core outcomes (and my product); I had to ensure that it was polished.



## **SECTION 5: KEY LEARNING**

In our society today, people try to avoid change or run from it. However, this is actually the ideal challenge that we are currently facing. Not only are individuals decreasing their creativity while attempting to follow the norm, but they are also missing out on their own new thinking in the form of ideas lost. This won't be the case if they had allowed their creativity to run wild and overpower their negative thoughts. Educators are not only constant role models for their students, but also leaders. If educators are constantly dealing with change and allocating everyone's ideas, the students will eventually display the same skill.

I have learned a great deal about myself as a professional educator and about how useful the tools are for people of all ages. I remember my first reaction to the CPS tools and how eager I was to make them a part of my everyday life. Now I had the opportunity to introduce them to young children who felt the same way as I first did! This learning experience was more than I could ask for. I finally understand the path to becoming a great teacher. In order to receive the most out of your students, you need to understand the appropriate skills and tools to enable life-long learning.

### **Reflections**

There has been so much running through my head for the past few months. I can honestly begin by saying I am so excited for the students and their creative potential that they displayed throughout my experience. It was a very unique experience that is just the beginning for me. I will continue exposing students of various CPS tools and the benefits of them. While working on this project there had been many variables that I had to take into consideration. There was a procedure that I tended on following but we all know how flexible educators have to be. With this being said, everything did not go as I planned on in my timeline.

For instance, one of my outcomes was going to consist of feedback from my principals. First, I should have thought about how challenging that was going to be to have both of them available to sit in and observe me. The assistant principal was able to make it in during one activity with a fourth grade class and part of another. However, due to her busy schedule and need to be available, it was difficult for me to reach my desired outcome. From what she was able to observe, she had nothing but positive comments about the activity in its entirety. A direct quote from her feedback form states, “Virtually all students were highly engaged in the lesson and took initiative in generating and sharing their own ideas. Students supported each other’s ideas, offered suggestion and modifications to the ideas, and built upon the ideas generated.” Clearly, this portrays a divergent ground rule and she wasn’t even in the room for the very beginning of the activity when I went through the divergent and convergent ground rules. Her feedback is attached in Appendix E.

Additionally, it was difficult for me to plan much of anything given my current position at the school. Since I am a building-based substitute, I can be anyone and everyone. What I mean by this is even if I am scheduled to be no one a particular day, when someone calls in, I am then in for them and my plan to be no one quickly changes. So, there were many instances when I wasn’t scheduled anywhere, and I intended on going into certain rooms to introduce the tools. However, four or more times this had to be changed to a later date. I felt bad because this obviously inconvenienced the classroom teacher and her plans for the day but there was nothing that could be done to change that. One might say, “Why wouldn’t you plan on introducing the tools when you are scheduled to be in a room?” Good question, but I didn’t do this because I thought that the classroom teacher’s feedback was just as important as the student’s feedback. I was able to kill two birds with one stone when I was demonstrating the potential of these tools. I

was also able to display the importance and show the teacher the level of engagement his/her students had. I truly enjoyed reading the teacher's feedback as much as the students. Ultimately, if I want to truly make an impact on my school as a whole, I need the teachers buy in as well. It's easier for them to watch me first and then be able to try it with their own students at a later date.

Unfortunately, some teachers are so set in their ways that it is hard to get them to budge and adapt to change. For example, I asked several teachers before I began who would be interested in participating in these activities and the amount of responses that I received was limited. I know that teachers are very busy and often overwhelmed, but I provided the positive attributes and the benefits to these activities from the beginning. I was shocked at the amount of teachers that actually wanted to have me in their room. Again, this is another variable that altered my experience. Obviously, it would have benefitted me to introduce CPS tools to as many students as possible, but now I can only hope that by word of mouth the word gets around. I was fortunate enough to ask some of the same teachers if I could come in a few times due to the difficult circumstance I was in and the ones who were helpful of course didn't mind. There were some students who had the opportunity to experience numerous tools which was actually interesting because it gave me the chance to identify their reactions multiple times to different tools.

I thought that it would be essential to include the feedback from the teachers whose room I was able to be in. The following figures include the feedback from the cooperating teachers that had the opportunity to observe the various CPS tools.

Observation FormName Russ MorganPosition 2nd grade teacherTo what degree do you think the goals of the lesson were met? Not at all 1 2 3 4 5 fully met

What did you observe in the lesson relative to goals?

I observed student brainstorming ~~and~~ and participating in a low-stress environmentTo what degree did you find this useful? Not at all 1 2 3 4 5 extremely useful

Describe some observations you had regarding usefulness:

The process lends itself to high level of student engagement as well as participationTo what degree did you observe student engagement? Not at all 1 2 3 4 5 very engaged

What did you specifically observe regarding student engagement?

The students who have the ability to play and listen were extremely engaged throughout the process. However, easier distracted had a harder time with boys in front of them.To what degree might you use this? Not at all 1 2 3 4 5 quite a bit

Name some ways you might use it:

This is a great way to generate ideas for some free write assignments

How well prepared do you feel to conduct an activity using this CPS tool?

Not well prepared 1 2 3 4 5 well preparedVery well modeled!How effective do you think this lesson was overall? Not effective 1 2 3 4 5 very effective

Thanks again!

Miss Lyness

Observation Form

Name Julie Stevener Position 2nd grade teacher

To what degree do you think the goals of the lesson were met? Not at all 1 2 3 4 5 fully met

What did you observe in the lesson relative to goals?

Provided creative thinking that met 2nd grade common core standards.

To what degree did you find this useful? Not at all 1 2 3 4 5 extremely useful

Describe some observations you had regarding usefulness:

Aligned to common core

To what degree did you observe student engagement? Not at all 1 2 3 4 5 very engaged

What did you specifically observe regarding student engagement?

Students couldn't get enough of the lesson!

To what degree might you use this? Not at all 1 2 3 4 5 quite a bit

Name some ways you might use it:

when the students are writing their own narrative

How well prepared do you feel to conduct an activity using this CPS tool?

Not well prepared 1 2 3 4 5 well prepared

How effective do you think this lesson was overall? Not effective 1 2 3 4 5 very effective

Thanks again!

Miss Lyness

Good behavior management!  
There was a lot going on in class!

Observation Form

Name

Olivia Tomczak

Position

4th grade teacherTo what degree do you think the goals of the lesson were met? Not at all 1 2 3 4 5 fully met

The goals were clearly defined before the lesson and they were met by the students by the end of the lesson.

What did you observe in the lesson relative to goals?

- goals were met and exceeded by students and teacher

To what degree did you find this useful? Not at all 1 2 3 4 5 extremely useful

The students really enjoyed the lesson and learned a lot about creative brainstorming.

Describe some observations you had regarding usefulness:

Students were extremely engaged.  
- made students think outside the box

To what degree did you observe student engagement? Not at all 1 2 3 4 5 very engaged

The students were highly engaged throughout the lesson.

What did you specifically observe regarding student engagement?

They filled out way more sticky notes than the initial goal, they were laughing, working together and having fun.

To what degree might you use this? Not at all 1 2 3 4 5 quite a bit

I will definitely use this strategy/lesson again.

Name some ways you might use it:

- Writing prompt ideas  
- Expedition project ideas

How well prepared do you feel to conduct an activity using this CPS tool?

Not well prepared 1 2 3 4 5 well prepared

- Had everything prepared

How effective do you think this lesson was overall? Not effective 1 2 3 4 5 very effective

Thanks again!

Miss Lyness



Observation FormName Rosie JabajiPosition 5th grade Student TeacherTo what degree do you think the goals of the lesson were met? Not at all 1 2 3 4 5 fully met

What did you observe in the lesson relative to goals?

The students were able to successfully write down their ideas to prepare for NYS (the problem they were trying to solve) testing.To what degree did you find this useful? Not at all 1 2 3 4 5 extremely useful

Describe some observations you had regarding usefulness:

I loved that the main question/problem was written on chart paper & that the students were able to write their thoughts & ideas on post-its. I love post its! Helps stay organized.To what degree did you observe student engagement? Not at all 1 2 3 4 5 very engaged

What did you specifically observe regarding student engagement?

Students were very engaged because they were able to share out each idea on their post it and come post it up on the main chart paper.To what degree might you use this? Not at all 1 2 3 4 5 quite a bit

Name some ways you might use it:

I would use this to help organize categories or my thoughts. This would also be a great process for students to do the same thing. It helps the thought process.

How well prepared do you feel to conduct an activity using this CPS tool?

Not well prepared 1 2 3 4 5 well preparedHow effective do you think this lesson was overall? Not effective 1 2 3 4 5 very effective

Thanks again!

loved it! Great activity! ☺

Miss Lyness

*Figure 30. Teacher Feedback.* This figure represents the teacher feedback that was received.

There is one more lasting effect that played a role in this experience as well. With my school being a charter school, we get renewed by the New York State Education Department (NYSED) every three or five years. This year happened to be the year that we got renewed. Our hope was to get the maximum of five years but unfortunately we only received one year. This put a large damper on everyone. Many teachers are very frightened as to what is going to happen next and there is a lot of pressure that has been added by administration. This affected me because I believe that this also limited the amount of teachers who allowed me in their classroom. There is never a good time for educators to take a break from teaching, but when they knew ahead of time of what I would be presenting to their class and how it could benefit their students, you would think there would have been more participation from the staff. With my knowledge around preferences, I understand that teachers have various teaching styles and some teachers are not flexible or struggle making changes to their day, but with time I can only hope that that changes. A creative person is a flexible person.

### **Student Reactions**

When I first began working on this project, I had envisioned that my product would be a tangible item that the students would benefit from. Although, I have still created a CPS Tool Deck for Children, I also realized that part of my product consists of the various reactions from the students involved. I had an indication that the students would enjoy participating in these activities but I didn't know *how much* it actually affected them and benefitted them until I had experienced the same reactions after being in a few classrooms. These reactions that I'm talking about are – a mix of excited and eagerness!



It occurred to me after being in only a few rooms that the students were over excited and eager to want to participate in another activity again. Their motivation and dedication to the learning that was occurring was beyond what I had expected. In each classroom that I had the opportunity to be in included each student fully engaged and enthusiastic about what was being introduced to them. The look on their faces said it all to me. Also, a few times when I was wrapping things up, a student would say, “Miss Lyness, why can’t we try and come up with even more ideas?” Unfortunately, my response was, “I would love to another time, but right now you have to get back to \_\_\_\_\_(Math, ELA, etc.).” This really broke my heart because it was obvious that the students wanted to continue on and brainstorm more ideas to a particular problem. Evidently, it wouldn’t have to be so cut and dry if more teachers would utilize these tools throughout their instruction on a day to day basis. This brings me back to the story about the fourth grade boy who asked me if I would do a similar activity like this during a Fun Friday. I cannot begin to state how thankful I am that I had the opportunity to get in to the rooms that I could and introduce some Creative Problem Solving (CPS) tools to students of different ages. Clearly, the reactions that I have received from numerous students were so powerful that I had to include it as a part of my product.

### **Criteria Used to Measure Effectiveness**

After introducing a tool to a class, I provided the students with a feedback form where they were able to identify the strengths, weaknesses, and comments around the specific tool. This will serve as a guide to help me identify if students understood the tool and more importantly how it can be used, along with its importance. Almost each experience was documented with pictures and videos so that I am able to further reflect on the process.

Consequently, I was able to provide documentation from administration including their feedback and thoughts about the overall concept: utilizing CPS tools in the classroom.

The feedback forms and overall comments from teachers, students and principals displayed whether or not I was successful. Since I required each group to complete feedback forms after their experience, these will help guide me in the right direction now and in the future. I was able to know what to change or do similarly for the next group based on the responses on the feedback forms.

### **Evaluation**

Evaluating my work is the most essential part of the project. It allows me to look back and identify the positives and negatives of what was completed. It also motivates me to assemble the final desired outcome; the CPS tool deck for children. As I stated previously, I received formal feedback from teachers, the students, and my principals which I had time to reflect on. Informal feedback was also apparent during each experience with each group of students. Identifying the students' engagement throughout the experience and catching the look on administration and the teachers' faces said it all. Additionally, if my principals ask me to conduct a Professional Development seminar on the use of CPS will also encourage me as a leader.

## **SECTION SIX: CONCLUSION**

Educators are constantly examining ways to enhance their students' creativity. It is the role of an educator to identify ways to encourage creativity in a way that benefits each student on an individual level. How students learn is just as important as what they learn. Engaged learning happens when students are actively involved in learning when they read, write, listen, speak and problem solve while gathering information and making personal, meaningful connections to everyday life. I believe that great teaching is about style and engagement. It is always a top priority to ensure that my students are having fun while learning! This project helped me recognize that when students are having fun, they reciprocate by participating. Problem-solving is also essential in all curriculum areas. I noticed that students gain knowledge as they find problems, think of solutions and finally arrive at a conclusion. In essence, creativity and problem solving form an essential link in human learning and serve as equally important as any other subject area taught in the elementary grades.

In essence, it is obvious that creativity must be encouraged in the educational systems as a way to actualize each child's creative talent. By encouraging creativity in the classroom, a teacher is ensuring that students have opportunities to analyze a problem and think for themselves, and are not swayed or limited by traditional and restrictive rules. I believe that if a child is encouraged to be creative whenever they learn, they will benefit throughout their life. The responsibility of ensuring the development and promotion of creativity in the classroom lies firmly in the teacher's hands. This is an aspect of education that must not be ignored. Rather than teaching students how to 'borrow' information from open sources, it is my goal to encourage students to develop their own ideas – ideas that are created within their own head. Essentially, encouraging and supporting creativity in the classroom is a skill not all teachers possess, and

only the ones who have creativity as a goal are the ones who most strongly impact their students' futures.

### **Next Steps**

In the future, I will continue using several CPS tools throughout my teaching. Every time that I am a substitute for a teacher I will be incorporating creativity in some way. I have learned that creativity is too crucial of a topic to leave out of the education world today. I will be revising and editing my tool deck for children as I continue on and have more tools to include in it. After I introduce more tools to students and get their feedback on how they find the tool useful and beneficial, I will then add the polished tool to the deck. Once I have my own classroom, I hope to have a full, complete, polished tool deck so that I can make several copies for each student. My plan is to make enough copies so that each student can use one for the entire school year.

In regards to the faculty at my school, I plan on conducting professional development seminars for the teachers and staff at my school. The assistant principal has already mentioned to me that she believes the staff would benefit from learning deeper about the importance of using creativity throughout their instruction.

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## **SECTION 7: APPENDICES**

**APPENDIX A:**  
**PERMISSION**



**Permission to place this Project online as part of the International Center for Studies resources.**

I hereby grant permission to the International Center for Studies in Creativity at Buffalo State college permission to place a digital copy of this master's Project (Commercializing Creative Products) in an online resource.



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Theresa Lyness

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April 28<sup>th</sup>, 2013

Date

**APPENDIX B:**  
**SAMPLE TIM LESSON PLAN**

## **Topic: The Importance of Inferring**

### **Modeling the Torrance Incubation Model of Teaching and Learning (40 minutes)**

**Theresa Lyness**

#### **Content Goal:**

- The students will be able to generate an inference based on clues textual details that are stated in the passage.
- The students will be able to apply their background knowledge in order to make logical responses about meaning.

#### **Creativity Objective: *combine and synthesize***

- To recognize that making inferences is similar to combining clues and background knowledge and synthesizing the information in order to create an inference.

#### **Materials/Input:**

- Garbage bag filled with 6 Tim Horton's cups, Sabres ticket stubs, two pizza boxes, boxes that toys came in, wrapping paper, yogurt cups, empty fruit containers, empty cans of soup, and several water bottles
- Making Inferences practice sheet
- Chart paper
- Markers

#### **Heightening Anticipation (15 mins)**

- First, the teacher will place a full garbage bag in front of the classroom. (This is the initial way of heightening the anticipation because the students wonder what is in the bag and why it is here)
- Next, the teacher states with much enthusiasm: "*So new neighbors moved in next door and I am really interested in getting to know them, so I went through their garbage to see if I could find out anything about them!*" The teacher then asks the students if they'd help her identify what kind of neighbors she has living next door.
- Then, the students are displayed what is in the garbage bag. (6 Tim Horton's cups, Sabres ticket stubs, two pizza boxes, boxes that toys came in, wrapping paper, yogurt cups, empty fruit containers, empty cans of soup, and several water bottles)
- (The students are introduced to inferring through "Neighbors Junk" activity which )

### **Deepening Expectations (15 mins)**

- The teacher advises the students to make an inference about what type of people are living next door.
- As a class, the students will discuss what clues or information helped them make an inference on the type of people that live next door. What background knowledge also helped you identify the neighbors?
- As a whole group, the class will brainstorm ideas as to why making inferences is important, not only while you read, but in life in general. (combine and synthesize ideas to make a collaborative list)
- The students will be given a practice sheet to practice making inferences. (attached) Not only will the students have several small passages to make an inference on but the students will also have to provide how and why they inferred what they did. This will allow students to think deeper about their thinking.

### **Extending the learning (10 mins)**

- The teacher will display a short 2 minute skit (role play) where the students will have to write down the inference that they make from me. They will have to have an inference ready to share for the next class.
- Also, after completing the practice sheet, the students will have to make an inference about their neighbors later that night for homework.
- The students will be informed that they have to not only use their background knowledge but also have to find one piece of evidence in order to prove it.
- The students will be instructed to bring in one piece of evidence from their neighbors and have it to share the next day.

### **SOURCES:**

Creative Problem Solving Thinking Skills Model- Puccio, Murdock & Mance (2007)  
 Making Inferences – Theresa Lyness (2012)

**APPENDIX C:**  
**STUDENT FEEDBACK**  
**GRADES 2-6**

**Feedback Form**Grade 2ndDate 3/1/13**Warm Feedback**1. Did you have fun? Yes or No Yes

2. What did you like about this activity?

I liked sharing my ideas.

3. How else could you use the tool, Idea Box? (Think of a time that this tool would help you!)

When you answer a question.

4. What did you learn from this activity?

How to make a movie.**Cool Feedback**

5. What would you change about this activity?

I would change ratings.**One last question...**

Would you like to participate in a similar activity again learning a new tool that you could use? Why or why not?

I would like to participate in a similar activity to learn a new tool because I would share it with others and use it.

Thank you for your help! ☺

Miss Lyness

Grade 2

**Feedback Form**

Date 3/11/13

**Warm Feedback**

1. Did you have fun? ☒ Yes or No Yes

2. What did you like about this activity?

I liked about it when we got to post ideas.

3. How else could you use the tool, Idea Box? (Think of a time that this tool would help you!)

It helps me by knowing how to make a movie.

4. What did you learn from this activity?

I learned that you can just think of times when we try to make a movie.

**Cool Feedback**

5. What would you change about this activity?

I would change some of the ending.

**One last question...**

Would you like to participate in a similar activity again learning a new tool that you could use? Why or why not?

Yes I would because it would make me learn more.

Thank you for your help! ☺

Miss Lyness

**Feedback Form**Grade 2<sup>nd</sup> gradeDate 3/1/13**Warm Feedback**1. Did you have fun? Yes or No yes

2. What did you like about this activity?

I liked helping out to make  
some Ideas

3. How else could you use the tool, Idea Box? (Think of a time that this tool would help you!)

When you are frustrated you got  
some thing to do.

4. What did you learn from this activity?

a lot of ideas can go together**Cool Feedback**

5. What would you change about this activity?

nothing. 😊**One last question...**

Would you like to participate in a similar activity again learning a new tool that you could use? Why or why not?

yes because it is fun! 😊

Thank you for your help! ☺

Miss Lyness



**Feedback Form**

Grade

2

Date

3/11/13

**Warm Feedback**1. Did you have fun? Yes or No yes

2. What did you like about this activity?

That we get to make up things

3. How else could you use the tool, Idea Box? (Think of a time that this tool would help you!)

I'll make something with the playdo.

4. What did you learn from this activity?

That it can give ideas.**Cool Feedback**

5. What would you change about this activity?

I'll will put more ideas.**One last question...**Would you like to participate in a similar activity again learning a *new* tool that you could use? Why or why not?I would to participate cause it was really fun

Thank you for your help! ☺

Miss Lyness

**Feedback Form**Grade 2Date 3/1/2013**Warm Feedback**1. Did you have fun? Yes or No yes

2. What did you like about this activity?

I liked when I said the word Sponge bob for the characters.

3. How else could you use the tool, Idea Box? (Think of a time that this tool would help you!)

I could use the pipe cleaners by doing a different activity.

4. What did you learn from this activity?

I learned from this activity that you can use this for a writing piece.**Cool Feedback**

5. What would you change about this activity?

What I would change about this activity is nothing.**One last question...**

Would you like to participate in a similar activity again learning a new tool that you could use? Why or why not?

Yes because I love this activity.

Thank you for your help! ☺

Miss Lyness

Grade 2ndFeedback FormDate 3/1/13Warm Feedback1. Did you have fun? Yes or No Yes

2. What did you like about this activity?

We got to piece for  
you.

3. How else could you use the tool, Idea Box? (Think of a time that this tool would help you!)

I could use this by  
writing

4. What did you learn from this activity?

How to make a  
movieCool Feedback

5. What would you change about this activity?

The Time and the plot.One last question...Would you like to participate in a similar activity again learning a *new* tool that you could use? Why or why not?

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Thank you for your help! ☺

Miss Lyness

**Feedback Form**

Grade

second grade

Date

march 1, 2012**Warm Feedback**1. Did you have fun? Yes or No yes

2. What did you like about this activity?

I liked what my movie  
was about.

3. How else could you use the tool, Idea Box? (Think of a time that this tool would help you!)

to keep me thinking

4. What did you learn from this activity?

I learned movies can  
be crazy**Cool Feedback**

5. What would you change about this activity?

that you could pick  
what happens**One last question...**

Would you like to participate in a similar activity again learning a new tool that you could use? Why or why not?

yes, because it's fun

Thank you for your help! ☺

Miss Lyness

**Feedback Form**Grade 2<sup>nd</sup> gradeDate 3-1-13**Warm Feedback**1. Did you have fun? Yes or No Yes

2. What did you like about this activity?

It was fun.

3. How else could you use the tool, Idea Box? (Think of a time that this tool would help you!)

It could help me on my writing piece.

4. What did you learn from this activity?

That I could use this again.**Cool Feedback**

5. What would you change about this activity?

I don't want to change nothing**One last question...**

Would you like to participate in a similar activity again learning a new tool that you could use? Why or why not?

Yes, because it was fun and I love her.

Thank you for your help! ☺

Miss Lyness You're welcome Miss Lyness



**Feedback Form**Grade 2Date 3/1/13**Warm Feedback**1. Did you have fun? ☒ Yes or No yes

2. What did you like about this activity?

I liked the movie.

3. How else could you use the tool, Idea Box? (Think of a time that this tool would help you!)

I can write a story with it

4. What did you learn from this activity?

I learned I could use an idea box.**Cool Feedback**

5. What would you change about this activity?

Nothing at all.**One last question...**

Would you like to participate in a similar activity again learning a new tool that you could use? Why or why not?

Yes, because it was fun

Thank you for your help! ☺

Miss Lyness

**Feedback Form**

Grade

Section grade 2

Date

7/1, 2013 Section  
Grade  
2**Warm Feedback**1. Did you have fun? Yes or No yes

2. What did you like about this activity?

that when we rote the numbers  
on a sticky note

3. How else could you use the tool, Idea Box? (Think of a time that this tool would help you!)

deriving writing

4. What did you learn from this activity?

Very much**Cool Feedback**

5. What would you change about this activity?

I do not no but I  
have to think about it**One last question...**

Would you like to participate in a similar activity again learning a new tool that you could use? Why or why not?

yes because it helps me  
learn better

Thank you for your help! ☺

Miss Lyness

Grade 4th grade Feedback Form Date 3/14

### Warm Feedback

1. Did you have fun? Yes or No Yes

2. What did you like about this activity?

I liked that we made up crazy feedback and ideas.

3. How else could you use the tool, Stick 'em up Brainstorming? (Think of a time that this tool would help you!)

It will help you when you are in a real situation. And you can use it.

4. What did you learn from this activity?

I learned that you need to think out of this universe because you need to come up with great ideas.

### Cool Feedback

5. What would you change about this activity?

I wouldn't change anything because it was so so so fun!

### One last question...

Would you like to participate in a similar activity again learning a new tool that you could use? Why or why not?

Yes. I choose yes because it's fun and I would really like to do it again.

Thank you for your help! ☺

Miss Lyness



Feedback FormGrade 4

Date \_\_\_\_\_

Warm Feedback1. Did you have fun? Yes or No yes

2. What did you like about this activity?

I liked when we came up with a whole bunch of ideas.

3. How else could you use the tool, Stick 'em up Brainstorming? (Think of a time that this tool would help you!)

I could use this tool when I have a problem.

4. What did you learn from this activity?

I learned that whenever you have a problem you can be creative.Cool Feedback

5. What would you change about this activity?

I would not change anything about this activityOne last question...Would you like to participate in a similar activity again learning a new tool that you could use? Why or why not?yes, I would like to participate in a similar activity learning a new tool I could use.

Thank you for your help! ©

Miss Lyness



Grade 4<sup>th</sup>

Feedback Form

Date 3/14/13

Warm Feedback

1. Did you have fun? Yes or No yes

2. What did you like about this activity?

I like that we got to  
write a lot of ideas.

3. How else could you use the tool, Stick 'em up Brainstorming? (Think of a time that this tool would help you!)

This tool ~~This tool could~~  
~~help me. And so now I got a way~~  
~~to solve my problem~~

4. What did you learn from this activity?

I learned that learning  
is fun

Cool Feedback

5. What would you change about this activity?

---



---

One last question...

Would you like to participate in a similar activity again learning a *new* tool that you could use? Why or why not?

---



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Thank you for your help! ☺

Miss Lyness

Feedback FormGrade 4Date 3-14-13Warm Feedback1. Did you have fun? Yes or No yes

2. What did you like about this activity?

every thing

3. How else could you use the tool, Stick 'em up Brainstorming? (Think of a time that this tool would help you!)

When I have to write a story.

4. What did you learn from this activity?

I learned that I can think of a lot of different things.Cool Feedback

5. What would you change about this activity?

I would not change any thing.One last question...Would you like to participate in a similar activity again learning a *new* tool that you could use? Why or why not?Yes I would like to do it again because it was  
Fun.

Thank you for your help! ☺

Miss Lyness

Feedback Form

Grade

Lthgrade

Date

3/14/13

Warm Feedback1. Did you have fun? Yes or No yes

2. What did you like about this activity?

what i like is the stick & note.

3. How else could you use the tool, Stick 'em up Brainstorming? (Think of a time that this tool would help you!)

At camp i brainstorm about thees so i won't get stuck.

4. What did you learn from this activity?

what i learned was that you can always brainstormCool Feedback

5. What would you change about this activity?

that we can have 5 min and read while talking.One last question...Would you like to participate in a similar activity again learning a *new* tool that you could use? Why or why not?Yes because it is fun and you learn more

Thank you for your help! ☺

Miss Lyness

Grade 4<sup>th</sup> **Feedback Form** Date 3/14/13

### Warm Feedback

1. Did you have fun? Yes or No yes

2. What did you like about this activity?

I liked The Swigly things.

3. How else could you use the tool, Stick 'em up Brainstorming? (Think of a time that this tool would help you!)

It will help me think out a Brainstorming

4. What did you learn from this activity?

Use teamwork in activities.

### Cool Feedback

5. What would you change about this activity?

Nothing.

### One last question...

Would you like to participate in a similar activity again learning a new tool that you could use? Why or why not?

YES because I would want to learn more.

Thank you for your help! ☺

Miss Lyness



Feedback FormGrade fourth gradeDate 3-14-13Warm Feedback1. Did you have fun? Yes or ~~no~~ yes

2. What did you like about this activity?

That we had toys to play  
with while we do work.

3. How else could you use the tool, Stick 'em up Brainstorming? (Think of a time that this tool would help you!)

This tool could help me. And  
so now I got a way to  
figure out my problem.

4. What did you learn from this activity?

I learned that learning  
can be fun.Cool Feedback

5. What would you change about this activity?

I would not change  
anything.One last question...Would you like to participate in a similar activity again learning a new tool that you could use? Why or why not?Yes yes I would like to.

Thank you for your help! ☺

Miss Lyness

Thank you Mrs. Lyness  
From: Girl

Grade

4

Feedback Form

Date

3/19/13

Warm Feedback

1. Did you have fun? Yes or No

Yes

2. What did you like about this activity?

I + was so fun we got  
to play with play-foe and work.

3. How else could you use the tool, Stick 'em up Brainstorming? (Think of a time that this tool would help you!)

like what if this  
really happend what will god

4. What did you learn from this activity?

That this activity was  
fun we but really use  
these things.

Cool Feedback

5. What would you change about this activity?

I would change  
Acting.

One last question...

Would you like to participate in a similar activity again learning a new tool that you could use? Why or why not?

Yes it can really  
help us

Thank you for your help! ☺

Miss Lyness

Feedback FormGrade 4Date 3/14/13Warm Feedback1. Did you have fun? Yes or No yes

2. What did you like about this activity?

This activity was fun the bear thing.

3. How else could you use the tool, Stick 'em up Brainstorming? (Think of a time that this tool would help you!)

I would use them to stick them on paper.

4. What did you learn from this activity?

I Learn from this activity was how to do if a bear was in your cabinCool Feedback

5. What would you change about this activity?

I would change the time to 3min to 5min.One last question...Would you like to participate in a similar activity again learning a *new* tool that you could use? Why or why not?yes I will

Thank you for your help! ☺

Miss Lyness



Grade 4Feedback FormDate 3/14/13Warm Feedback1. Did you have fun? Yes or No yes

2. What did you like about this activity?

I liked that you got to write down your ideas

3. How else could you use the tool, Stick 'em up Brainstorming? (Think of a time that this tool would help you!)

It could help you because if it really helped you could use the ideas

4. What did you learn from this activity?

I learned that thinking can solve everythingCool Feedback

5. What would you change about this activity?

I would change the brainstorming in to something that you could do all the time I like look at yourOne last question...

Would you like to participate in a similar activity again learning a new tool that you could use? Why or why not?

Yes because its fun and you get to brainstorm

Thank you for your help! ☺

Miss Lyness

**Feedback Form**Grade 4<sup>th</sup>Date 3/14/13**Warm Feedback**1. Did you have fun? Yes or No yes

2. What did you like about this activity?

What I liked about this activity was I could have fun and write funny/crazy stories and notes.

3. How else could you use the tool, Stick 'em up Brainstorming? (Think of a time that this tool would help you!)

I could use the tool on the notes to help me.

4. What did you learn from this activity?

I learned that some of these notes really could help me out if this really happened.**Cool Feedback**

5. What would you change about this activity?

I would not change anything cause it was perfect.**One last question...**

Would you like to participate in a similar activity again learning a new tool that you could use? Why or why not?

Yes I would because this activity was 1 the most fun activity I have did.

Thank you for your help! ☺

Miss Lyness

Grade 4 grade **Feedback Form** Date 3-14-13

### Warm Feedback

1. Did you have fun? Yes or No yes

2. What did you like about this activity?

That I had fun and I got  
to play with playdough

3. How else could you use the tool, Stick 'em up Brainstorming? (Think of a time that this tool would help you!)

the playdough

4. What did you learn from this activity?

that if a bear is  
in your cabin I  
a bunch of Idias.

### Cool Feedback

5. What would you change about this activity?

Nothing it is perfect  
the way it is.

### One last question...

Would you like to participate in a similar activity again learning a *new* tool that you could use? Why or why not?

yes Because it is a really  
fun activity.

Thank you for your help! ☺

Miss Lyness

Feedback FormGrade 5<sup>th</sup>Date 4-8-2013Warm Feedback1. Did you have fun? Yes or No yes

2. What did you like about this activity?

We got to become up with ideas

3. How else could you use the tool, Brainwriting? (Think of a time that this tool would help you!)

you be able to do this during writing

4. What did you learn from this activity?

How to work togetherCool Feedback

5. What would you change about this activity?

If we could pick them up there are selfsOne last question...Would you like to participate in a similar activity again learning a *new* tool that you could use? Why or why not?I would with baby brother and baby sister.

Thank you for your help! ☺

Miss Lyness

Feedback FormGrade 5<sup>th</sup> gradeDate 4/8/13Warm Feedback1. Did you have fun? Yes or No Yes

2. What did you like about this activity?

I love the activity it was cool  
to try to write down a lot.

3. How else could you use the tool, Brainwriting? (Think of a time that this tool would help you!)

To write down and study for  
the real test

4. What did you learn from this activity?

I learned that you can have  
fun learn to do good on the  
test.Cool Feedback

5. What would you change about this activity?

Nothing I liked that the way it  
was.One last question...Would you like to participate in a similar activity again learning a *new* tool that you could use? Why or why not?you can use paper, notes, and  
relax.

Thank you for your help! ☺

Miss Lyness



Feedback FormGrade 5<sup>th</sup> GradeDate 4/8/13Warm Feedback1. Did you have fun? Yes or No yes

2. What did you like about this activity?

I like the part when you can shout out.

3. How else could you use the tool, Brainwriting? (Think of a time that this tool would help you!)

I can use this tool to help me with the NYC state test.

4. What did you learn from this activity?

I learn that crazy ideas is good and that what ever help you with the NYC state test then do it.Cool Feedback

5. What would you change about this activity?

I would change the subject that we had to write for.One last question...

Would you like to participate in a similar activity again learning a new tool that you could use? Why or why not?

yes because this tool help me with my ideas.

Thank you for your help! ☺

Miss Lyness

Feedback FormGrade 5<sup>th</sup> gradeDate 4/8/13Warm Feedback1. Did you have fun? Yes or No yes

2. What did you like about this activity?

What I liked was shouting out  
and writing

3. How else could you use the tool, Brainwriting? (Think of a time that this tool would help you!)

We could use this tool for  
bullying to not bully.

4. What did you learn from this activity?

I learned a whole bunch of  
ways to prepare for my test.Cool Feedback

5. What would you change about this activity?

I would change the topic.One last question...Would you like to participate in a similar activity again learning a new tool that you could use? Why or why not?Yes, I would because I could learn  
new things.

Thank you for your help! ☺

Miss Lyness

Feedback FormGrade 5thDate 4-8-13Warm Feedback1. Did you have fun? Yes or No yes

2. What did you like about this activity?

we wrote it down & said it out loud.

3. How else could you use the tool, Brainwriting? (Think of a time that this tool would help you!)

I could use it for a writing piece

4. What did you learn from this activity?

that you can think out loud. (during this activity)Cool Feedback

5. What would you change about this activity?

nothingOne last question...Would you like to participate in a similar activity again learning a *new* tool that you could use? Why or why not?yes because it is fun.

Thank you for your help! ☺

Miss Lyness



Feedback FormGrade 5Date 3-8-13Warm Feedback1. Did you have fun? Yes or No Yes

2. What did you like about this activity?

we could write our thoughts and  
not share them

3. How else could you use the tool, Brainwriting? (Think of a time that this tool would help you!)

---

---

4. What did you learn from this activity?

write what you like about it  

---

---

Cool Feedback

5. What would you change about this activity?

nothing  

---

---

One last question...Would you like to participate in a similar activity again learning a *new* tool that you could use? Why or why not?Yes, because it is fun  

---

---

Thank you for your help! ☺

Miss Lyness

Grade 5th

Feedback Form

Date 4/8/13

Warm Feedback

1. Did you have fun? Yes or No yes

2. What did you like about this activity?

it's fun and creative.

3. How else could you use the tool, Brainwriting? (Think of a time that this tool would help you!)

Brainstorm take notes  
look for evidence

4. What did you learn from this activity?

It's creative

Cool Feedback

5. What would you change about this activity?

more fun tools

One last question...

Would you like to participate in a similar activity again learning a *new* tool that you could use? Why or why not?

yes because I like to  
learn new things

Thank you for your help! ☺

Miss Lyness

Grade 5<sup>th</sup>

Feedback Form

Date 4-8-13

Warm Feedback

1. Did you have fun? Yes or No yes

2. What did you like about this activity?

What I liked about this activity is we were moving fast.

3. How else could you use the tool, Brainwriting? (Think of a time that this tool would help you!)

How I could use this tool is if I'm at home and I need to think.

4. What did you learn from this activity?

What I learned from this activity is you don't have to be slow to think.

Cool Feedback

5. What would you change about this activity?

What I would change is I would not shout out so much.

One last question...

Would you like to participate in a similar activity again learning a *new* tool that you could use? Why or why not?

Yes, I would like to participate in activities similar because I got to play with toys.

Thank you for your help! ☺

Miss Lyness

**APPENDIX D:**  
**TEACHER FEEDBACK**

Observation FormName Russ MorganPosition 2nd grade teacherTo what degree do you think the goals of the lesson were met? Not at all 1 2 3 4 5 fully met

What did you observe in the lesson relative to goals?

I observed student brainstorming ~~and~~ and participating in a low-stress environmentTo what degree did you find this useful? Not at all 1 2 3 4 5 extremely useful

Describe some observations you had regarding usefulness:

The process lends itself to high level of student engagement as well as participationTo what degree did you observe student engagement? Not at all 1 2 3 4 5 very engaged

What did you specifically observe regarding student engagement?

The students who have the ability to play and listen were extremely engaged throughout the process. However, ~~easier distracted~~ had a harder time with boys in front of them.To what degree might you use this? Not at all 1 2 3 4 5 quite a bit

Name some ways you might use it:

This is a great way to generate ideas for some free write assignments

How well prepared do you feel to conduct an activity using this CPS tool?

Not well prepared 1 2 3 4 5 well preparedVery well modeled!How effective do you think this lesson was overall? Not effective 1 2 3 4 5 very effective

Thanks again!

Miss Lyness

Observation Form

Name Julie Stevener Position 2nd grade teacher

To what degree do you think the goals of the lesson were met? Not at all 1 2 3 4 5 fully met

What did you observe in the lesson relative to goals?  
Provided creative thinking that met 2nd grade common core standards.

To what degree did you find this useful? Not at all 1 2 3 4 5 extremely useful

Describe some observations you had regarding usefulness:

Aligned to common core

To what degree did you observe student engagement? Not at all 1 2 3 4 5 very engaged

What did you specifically observe regarding student engagement?  
Students couldn't get enough of the lesson!

To what degree might you use this? Not at all 1 2 3 4 5 quite a bit

Name some ways you might use it: when the students are writing their own narrative

How well prepared do you feel to conduct an activity using this CPS tool?

Not well prepared 1 2 3 4 5 well prepared

How effective do you think this lesson was overall? Not effective 1 2 3 4 5 very effective

Thanks again!

Miss Lyness

Good behavior management!  
There was a lot going on in class!



Observation Form

Name

Olivia Tomczak

Position

4th grade teacherTo what degree do you think the goals of the lesson were met? Not at all 1 2 3 4 5 fully met

The goals were clearly defined before the lesson and they were met by the students by the end of the lesson.

What did you observe in the lesson relative to goals?

- goals were met and exceeded by students and teacher

To what degree did you find this useful? Not at all 1 2 3 4 5 extremely useful

The students really enjoyed the lesson and learned a lot about creative brainstorming.

Describe some observations you had regarding usefulness:

Students were extremely engaged.  
- made students think outside the box

To what degree did you observe student engagement? Not at all 1 2 3 4 5 very engaged

The students were highly engaged throughout the lesson.

What did you specifically observe regarding student engagement?

They filled out way more sticky notes than the initial goal, they were laughing, working together and having fun.

To what degree might you use this? Not at all 1 2 3 4 5 quite a bit

I will definitely use this strategy/lesson again.

Name some ways you might use it:

- Writing prompt ideas  
- Expedition project ideas

How well prepared do you feel to conduct an activity using this CPS tool?

Not well prepared 1 2 3 4 5 well prepared

- Had everything prepared

How effective do you think this lesson was overall? Not effective 1 2 3 4 5 very effective

Thanks again!

Miss Lyness

Observation Form

Name

Rosie Jabaji

Position

5th grade Student Teacher

To what degree do you think the goals of the lesson were met? Not at all 1 2 3 4 5 fully met

What did you observe in the lesson relative to goals?

The students were able to successfully write down their ideas to prepare for NYS (the problem they were trying to solve) testing.

To what degree did you find this useful? Not at all 1 2 3 4 5 extremely useful

Describe some observations you had regarding usefulness:

I loved that the main question/problem was written on chart paper &amp; that the students were able to write their thoughts &amp; ideas on post-its. I love post its! Helps stay organized.

To what degree did you observe student engagement? Not at all 1 2 3 4 5 very engaged

What did you specifically observe regarding student engagement?

Students were very engaged because they were able to share out each idea on their post it and come post it up on the main chart paper.

To what degree might you use this? Not at all 1 2 3 4 5 quite a bit

Name some ways you might use it:

I would use this to help organize categories or my thoughts. This would also be a great process for students to do the same thing. It helps the thought process.

How well prepared do you feel to conduct an activity using this CPS tool?

Not well prepared 1 2 3 4 5 well preparedHow effective do you think this lesson was overall? Not effective 1 2 3 4 5 very effective

Thanks again!

loved it! Great activity! 😊

Miss Lyness



**APPENDIX E:**  
**FEEDBACK FROM ADMINISTRATOR**

### **Observation Form**

Name: Theresa Lyness

Observer: Jillian Keicher, Assistant Academic Officer

To what degree do you think the goals of the lesson were met? **Not at all 1 2 3 4 5 fully met.**

What did you observe in the lesson relative to goals?

*The instructional purpose of the lesson was clearly communicated to the students, and directions and expectations were explained clearly. The students were engaged in the learning task, indicating that they understood what to do and the purpose of the lesson. The students brainstormed numerous ideas based on Theresa's prompt.*

To what degree did you find this useful? **Not at all 1 2 3 4 5 extremely useful**

Describe some observations you had regarding usefulness:

*Students were highly engaged in this brainstorming process, and generated many ideas in a timely manner.*

To what degree did you observe student engagement? **Not at all 1 2 3 4 5 very engaged**

What did you specifically observe regarding student engagement?

*Virtually all students were highly engaged in the lesson and took initiative in generating and sharing their own ideas. Students supported each other's ideas, offered suggestion and modifications to the ideas, and built upon the ideas generated. The materials given to students supported the learning goals and allowed students to have a visual representation of the quantity of ideas created. The pacing of the lesson also allowed students the time to be intellectually engaged. Students had an opportunity for reflection and closure on the lesson.*

To what degree might you use this? **Not at all** 1 2 3 4 5 *quite a bit*

Name some ways you might use it:

*This is a great strategy to use with teachers during professional development. Teachers could use this strategy during writing or as an extension of reading.*

How well prepared do you feel to conduct an activity using this CPS tool?

**Not well prepared** 1 2 3 4 5 *well prepared*

How effective do you think this lesson was overall? **Not effective** 1 2 3 4 5 *very effective*

Thanks again!

Miss Lyness

**APPENDIX F:**  
**PICTURES OF**  
***CPS TOOL DECK FOR CHILDREN***

ways might I use Idea Box?

that ways

ways might

## Use Brainware

What is the writing process?

use St... or process

... my thought  
tick 'em  
igh

...in Up P  
...ideas  
...it I u

ink of

Force of Ide

ed C  
as f

**Divergent Tools**

**Urgent Tools**

with a lot of ideas. There are a few guidelines you are diverging:

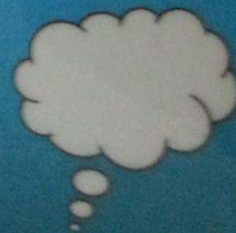
ideas. There  
you are diverging:

## CPS TOOL DECK FOR CHILDREN



How to introduce students to problem solving tools that they can use independently?

How to solve  
problems by thinking  
outside the box?



### **Importance of Tool Deck**

This tool deck has been created for you to use throughout the year. There are several tools included to help you use Creative Problem Solving (CPS) in order to solve problems.

The tool deck consists of the divergent and convergent ground rules, along with the types of tools found in each type of thinking. You will find the divergent tools in **blue** and the convergent tools in **red**.

After giving you a brief introduction to the tool and how to use it, this tool deck also includes examples from students on ways to use each particular tool.

If you happen to come up with another way of how you use a specific tool, please let me know! The more ideas we have on ways to use each tool, the more beneficial the tools can be!

***Enjoy your personal tool deck!***

### **Divergent Tools**

Divergent tools help you come up with a lot of ideas. There are a few guidelines that you need to follow when you are diverging:

### **Divergent Ground Rules**

1. **Defer judgment** (Do not put down any ideas – all ideas are welcome!)
2. **Seek quantity** (The more ideas the better!)
3. **Seek wild and unusual ideas** (The crazier the better!)
4. **Build on other Ideas** (Listen to other ideas and build off of them!)

Adapted from: Osborn, A.F. (1953). *Applied Imagination: Principles and procedures of Creative Problem Solving* (3<sup>rd</sup>. ed). New York: Scribner's.



### Forced Connections

This tool provides you with visuals in order to help seek connections when solving a problem.



### In what ways might I use Forced Connections?

- ✚ To help me think of ideas for a writing piece
- ✚ To help me come up with a variety of ideas
- ✚ To assist me with writing
- ✚ To support me when learning about poetry,  
more specifically, similes and metaphors
- ✚ This tool helps me branch out to  
my surroundings for help.
- ✚ Forced connections gives me ideas of  
people, nature, food and machinery which are all  
connections that I can make when I am stuck.

(Ideas brainstormed by second, fourth and fifth graders)

### **Stick 'em Up Brainstorming**

This tool helps you brainstorm many ideas in a short period of time. The key is to write down one idea per post-it note and say them out loud as you write them.



### **In what ways might I use Stick 'em Up Brainstorming?**

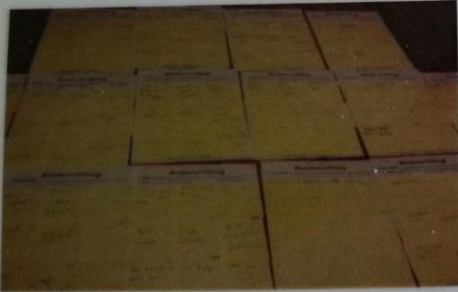
- ✚ To help me think of ideas for a writing piece
- ✚ To help me come up with a variety of ideas
- ✚ I could use the tool on notes to help me study
- ✚ To help me come up with ideas for projects
- ✚ This tool helps in any real situation  
or to solve a real problem
- ✚ When I have to write a story and brainstorm ideas
- ✚ When I'm camping, I could use this tool to brainstorm  
ways to prevent getting  
stung by a bee

(Ideas brainstormed by fourth and fifth graders)



### **Brainwriting**

This tool helps you brainstorm ideas in a quiet manner. It's importance is to build off of other ideas that are shown on the brainwriting form. There are 9 post-it notes on a sheet of paper in 3 rows of 3. It is your goal to complete a row and then pass your sheet on to someone else and complete a new row.



### **In what ways might I use Brainwriting?**

- ✚ To help during the writing process
- ✚ To help organize categories or my thoughts
- ✚ To help brainstorm ways of studying for a test
- ✚ You could use this tool to help brainstorm ways to prevent bullying
- ✚ You could use this tool to help you solve a math problem
- ✚ To help come up with ideas in order to solve any real life problem
- ✚ To help brainstorm ways to present a project

(Ideas brainstormed by fifth graders)

### Idea Box

Use this tool when you are looking to brainstorm a variety of options or combinations for a given problem. You begin by labeling characteristics of the problem across the top as column headings. After you completed the idea box with all of the boxes filled in, you are able to choose various ideas from each column, which will give you numerous combinations.

	Title	Author	Setting	Characters
1st	Harry Potter	J.K. Rowling	Witchy Forest	Witchy Forest
2nd	Charlotte's Web	E.B. White	Ark 2 Forest	Ark 2 Forest
3rd	Charlotte's Web	E.B. White	Ark 2 Forest	Ark 2 Forest
4th	Charlotte's Web	E.B. White	Ark 2 Forest	Ark 2 Forest
5th	Charlotte's Web	E.B. White	Ark 2 Forest	Ark 2 Forest
6th	Charlotte's Web	E.B. White	Ark 2 Forest	Ark 2 Forest



### In what ways might I use Idea Box?

- ✚ To help come up with ideas for creating a movie, skit, play, or writing a story.
- ✚ When writing my own narrative
- ✚ When planning any event such as a party
- ✚ When brainstorming ideas for a project
- ✚ When generating ideas for a presentation
- ✚ This tool can be used when trying to solve a detailed problem that includes several categories
- ✚ This tool provides several combinations to one problem

(Ideas brainstormed by second and sixth graders)

### **Convergent Tools**

Convergent tools help you select the most promising or 'the best' ideas.  
There are a few guidelines that you need to follow when you are converging:

### **Convergent Ground Rules**

1. **Be affirmative** (Try to look at the positive side of an idea!)
2. **Be deliberate** (Give every option a fair chance!)
3. **Check the objectives** (Stay focused and relevant to objective!)
4. **Improve ideas** (Modify an idea to better suit your needs!)
5. **Consider novelty** (Give novelty a chance!)

Adapted from: Osborn, A.F. (1953). *Applied Imagination: Principles and procedures of Creative Problem Solving* (3<sup>rd</sup> ed). New York: Scribner's.

### **PPCO**

#### **(Pluses, Potentials, Concerns, Overcoming the concern)**

This tool helps you identify the pluses or positives of an idea, the potentials an idea has, the concerns about an idea, and ways to overcome that concern. This is an important tool to use when you are trying to self-assess how well an idea worked or just a self-assessment pertaining to something that you did.

#### **Pluses:**

I liked.....

#### **Potentials:**

It might.....

#### **Concerns:**

How to.....?

#### **Overcoming concern:**

Pick one concern that you want to work on and brainstorm ideas for



### How might I use PPCO?

- ✚ PPCO will help assess an idea and see how well it worked
- ✚ This tool could be used as a self-assessment after a presentation or project
- ✚ This tool will help improve an idea
- ✚ This tool can be used as a way to check my writing independently; it will provide information on what else needs to be added in my writing as well as what I liked about my writing

(Ideas brainstormed by third and sixth graders)






### Card Sort

This tool helps you rank or prioritize many different options. It is used best when there are numerous ideas or options. Let's say you have 10 options; you need to write each option on an index card. Then, write a 10 on your least favorite option and set it aside; of the remaining options, mark a 1 on your favorite, and set it aside. Of the remaining options, write a 9 on your least favorite, and set it aside. Continue all the way through, until each card has a number.

1	2	3	4	5	6	7	8	9	10
Favorite Idea									Least favorite idea



### **How might I use Card Sort?**

-  **To help prioritize my thoughts**
-  **This tool helps put my ideas in order based on which are the most important**
-  **This tool can be used when I have a lot of ideas and I don't know which is best**
-  **This tool could be used as a graphic organizer for writing**
-  **This tool could help identify which idea to do first when I have many to choose from**

(Ideas brainstormed by fifth graders)

**APPENDIX G:**  
**CONCEPT PAPER**

## **The Effects of Children Properly Utilizing CPS Tools in the Classroom:**

**Theresa Lyness**

**Submitted on:**

**Project Type: Improving the creativity of others and developing a product**

### **Section One**

#### **Purpose and Description of the Project**

Studying creativity is becoming more common in schools. As a Building-Based Substitute at a Charter School, I have had the opportunity to work with a variety of teachers and students. The benefit of working with children of all ages is that I am able to identify what works best in each particular age group. Obviously, creativity has to be used in a meaningful manner per grade in order for success. I have also noticed that students highly benefit from studying creativity and more importantly, learning how to use creativity independently in order to achieve success. The purpose of this project is to provide students with the necessary tools and techniques in order to properly utilize creativity. It is one thing for teachers to advise their students that they need to be creative, but what if the students aren't able to understand *how* to? It is my goal to ensure that the students have the necessary tools and techniques introduced to them in order for them to further their creative potential. There will be numerous tools introduced to children where they will be given the opportunity to experience several CPS tools. Not only will children be able to use the CPS tools in order to solve a personal problem, but they will also have the tools available for them in order to use in their academics as well. Furthermore, the students will be shown ways to apply each tool that is more meaningful to them. The title of this project is: *The effects of children properly utilizing CPS tools in the classroom.*

### **Rationale for Project**

I chose to focus my project around the Creative Problem Solving tools as an important aspect of how to intertwine creativity in the classroom because it is imperative for children to have a background of how to properly utilize creativity and CPS on an individual level. Adults have tools to use in order to help them build something new, such as a kitchen cabinet or bookshelf. If adults didn't have the necessary tools, think about how difficult it would be to build anything. This is the same with children. Children are being taught to think creatively or 'outside the box' so to speak. However, if students are not provided with the required basics of how to think creatively, we as educators cannot expect them to. My hope is to have students benefit from having these tools in order to help them in the future. Students will eventually have all tools available to them, so whenever they need assistance with writing a paper, or solving a problem, etc. they will be able to pull out their tool deck and use the appropriate tool. I am truly eager and motivated to complete this project because I believe that it is vital that children of all ages are given the essential criteria needed to become lifelong learners and leaders. Currently, I intend that students will be much more excited about their learning and motivated to experience new helpful tools. Introducing students to new and useful ways of learning will also affect me as an educator. I will be excited to teach and learn from the students as well as identify their reactions to each tool. When I have my own classroom, I plan on providing each student with their own tool deck to use throughout the year. I consider teaching one tool a week so that students do not get overwhelmed or confused.

Unfortunately, teachers in my school are in a demanding place as we speak. Educators currently have pressure from administration, SED (State Education Department) and our current Board to have a remarkable year and increase student scores on the New York State tests in order



to stay open. Since we are a charter school, we are weakened with this pressure every year because we can easily be closed due to a variety of reasons. Many teachers in critical grades suffer from the stress of their students scoring high to satisfy administration, which puts a damper on the level of creativity in the classroom. It is apparent that some students are not great test-takers and one test should not have that much power over the student, as well as, the teacher. Teachers can adhere to the standardized tests and creativity by intertwining creativity naturally within everyday lesson plans.

## **Section Two**

Creativity is a vital aspect of everyday life whether people choose to accept it or not. If it wasn't for creativity, there wouldn't be advanced civilization, including every aspect from fire to the IPOD. There are many well-known scholars who agree that creativity is an essential aspect to the education field. Fisher and Williams (2004) stated that, "Creativity is central to improving the functioning and development of society and of schools" (p. 11). I strongly believe that it is up to educators and future educators to engrain creativity and creative tools and techniques in our students. Furthermore, Torrance stated, "It now seems that many important things, though not all can be learned more effectively and economically in creative ways rather than by authority" (Torrance, 1970, p. 1). Not only should the children be taught in a creative way, but should also be instructed on how to use their creative tools and techniques within the classroom. Fisher and Williams (2004) had indicated that:

The challenge for schools and social institutions is clear: the focus of education must be on creating people who are capable of thinking and doing new things, not simply repeating what past generations have done, but equipped for a world of challenge and change. (p. 11)

Clearly, it is vital for children to be learning how to do novel things on their own, rather than following in someone's footsteps. It is the teacher's responsibility to balance the teacher and facilitator role. Ultimately, this is the goal of educators today.

When people hear the word 'creativity' many unique thoughts may arise. There are several scholars who believe that creativity is essential in a child's life and begins in school. According to Robert Fritz (1984), "The most important developments in civilization have come through the creative process, but ironically, most people have not been taught to be creative" (p. 11). Clearly, children need to be taught *how* to be creative, which will enable them to become innovative, enterprising and capable of leadership to equip them for their future lives as workers and citizens. Furthermore, creative students lead richer lives and make a valuable contribution to society. Another prominent expert in the field of creativity, Sir Ken Robinson had made various important remarks around creative education. He had stated that, "Creativity now is as important in education as literacy, and we should treat it with the same status" (2006). Moreover, Robinson challenges the way children are being educated and believes that teachers are educating people out of their creative capacities. Additionally, in 1976 E. Paul Torrance wrote an article with a request to call attention on the development of creativity in children and preparing them for the unknown. He stated the following:

Because of rapid worldwide changes, today's children will live as adults in a world vastly different from today's. The occupations in which they will engage do not even exist; their work will require abilities, skills, and information yet unimagined. Dangers of future shock are serious. If a person does not rehearse future emergencies, he is going to be surprised and the surprised person is likely to be a dead one. The secret of preparing

for the future lies in trying to surprise ourselves, and we do this by imagining, exploring, and rehearsing both imaginable and the unimaginable. (Torrance, 1976)

These skills should be introduced to children in their earliest stages of education in order to instill them into their lives and prepare them for their future endeavors.

### **Importance of Project**

This project is important because it allows students to effectively identify the outcomes of using CPS tools with work or problems that they are responsible for. The students will be given the opportunity to experience numerous CPS tools and decipher ways in which to use each tool. There are many Creative Problem Solving (CPS) tools that can enhance the level of creativity that occurs in the classroom (Puccio, Mance, Switalski & Reali, 2012). I am currently working on identifying which tools work best with particular aged students, but there are several tools that I have already exposed to students. It is clear that students enjoy being involved in the learning and dislike always being told what to do or what page to open up to. I consider *Stick-em up Brainstorming*, *Brainwriting*, and *Highlighting* (Puccio, Mance, Switalski & Reali, 2012) three powerful tools that students prefer. I used *Stick-em up Brainstorming* with a class when we were trying to brainstorm ideas for a project. We took it one step further and highlighted the ideas that stood out or sparkled to them as a class. Instead of giving the students a handout of what the project needs to consist of, I thought that they would appreciate coming up with their own ideas of how they want to showcase their information. This also allowed the students to display their creativity through a unique representation. Alex Osborn (1964) stated that, “The creative type of teaching essentially aims to involve students in creative effort and a widely used device for this purpose is known as group brainstorming” (p. 25). In addition, I have also

introduced and used *Brainwriting* with the same group of students. They were instructed to use this particular tool in order to come up with ideas for their next research paper that related to the Human Body. Even though this was a much more quiet experience, the students still seemed motivated and content to be a part of identifying their topic. However, when students were tending to slow down, I used Forced Connections to help them diverge. Students are accustomed to being given a topic to research or being told the type of project that they have to create, but when teachers initiate voice in the classroom and open up ideas to the students, there is much more excitement and ownership over their work. I believe that all children are masterpieces in their own special ways, and the best qualities in each and every one of them can only be honed if the classroom teacher approaches education with creativity in the classroom and only if, freedom of thought and speech are encouraged and rewarded. Thus, I have concluded that utilizing CPS tools in the classroom help towards making the classroom a creative learning environment.

I believe how students learn is just as important as what they learn. Engaged learning is when students are involved in active learning when they read, write, listen and speak to gather information and make connections to everyday life. Expeditionary Learning is similar to student-centered learning in a sense that both methods: (1) organize learning around an experiential project-based approach in which students do original research and create high-quality products and (2) they develop critical thinking and problem-solving skills as essential elements of the deep learning that prepares students for success. The school I work at is an Expeditionary Learning school and it directly reflects the highlighted principles of using creativity in the classroom. It is essential to base instruction on project-based learning, where students participate in hands-on work that benefits each individual and more importantly, their character. "Project-based instruction engages children in long-term initiatives. In sustained

projects, children participate as inventors and researchers” (Isbell & Raines, 2007, p. 54). This focus is on learning more about the topic, instead of just finding the right answer. Learning Expeditions support critical literacy and address central academic standards of content, while promoting character development and fostering a service ethic. Expeditionary Learning enhances student motivation and engagement through high-level tasks and active roles in the classroom and helps students develop the critical thinking and problem-solving skills needed to succeed in the future. Above all, divergent thinking skills are considered to be at the heart of creativity and Expeditionary Learning encourages divergent thinking. Sir Ken Robinson discussed the decline of divergent thinking in schools where students are taught to know one correct answer.

Divergent thinking isn’t a synonym, but is an essential capacity for creativity. It’s the ability to see lots of possible answers to a question, lots of possible ways to interpret a question, to think laterally, to think not just in linear or convergent ways, to see multiple answers, not one. (Robinson, 2009)

Consequently, I look forward to implementing CPS tools within the classroom because it will finally allow students to focus on divergent thinking rather than just simply convergent thinking.

## **Section Three**

### **Personal Learning Goals and Outcomes**

The project will begin on February 11<sup>th</sup>, 2013 and will involve students of all ages (grades K-6) at my school. There are several personal learning goals that I hope to overcome. It would be great if I could create a desired template of what the tool deck for children will look like. This tool deck will include specific polished tools including an example of how to use the tool. Another goal is to ensure that students understand the importance of each tool introduced

to them, so that they can use the tool independently. More importantly, I hope to leave a lasting effect on students and the importance of using creativity on a regular basis. In the future, I want students to be able to use a tool on an independent basis without having to think about why they are using it or how it would help.

### **Project Timeline**

February 11<sup>th</sup> – February 15<sup>th</sup>: Introduce and document **Forced Connections** to a first grade class.

February 18<sup>th</sup> – NO SCHOOL, President's Day

February 19<sup>th</sup> – February 22<sup>nd</sup>: Introduce and document **Brainwriting** to a secondary grade

February 25<sup>th</sup> – March 1<sup>st</sup>: Introduce and document **Card Sort** to a primary grade

March 4<sup>th</sup> – March 8<sup>th</sup>: Introduce and document **Praise First (POINT)** to a secondary grade

March 11<sup>th</sup> – March 15<sup>th</sup>: Introduce and document **Idea Box** to a primary grade

March 18<sup>th</sup> – March 22<sup>nd</sup>: Introduce and document **Forced Connections** to a secondary grade

March 25<sup>th</sup> – March 28<sup>th</sup>: Introduce and document **Stick 'em up Brainstorming** to both a primary and secondary grade

March 29<sup>th</sup> – April 5<sup>th</sup>: NO SCHOOL, Spring Break

(Reflection thus far and receive documentation from teachers)

April 8<sup>th</sup> – April 12<sup>th</sup>: Gather reflections, documentation, feedback etc. from all participants

*\*\*Dates and times may vary due to my position at the school. However, I plan to introduce 4 tools to both the primary and secondary grades\*\**

*\*\*Also, depending on my administrators' schedules, I cannot specifically state which dates they will be observing me yet\*\**

### **Section Four**

There will be specific outcomes of the project. First and foremost, the product will be the desired outcome. At the end, I will have a tool deck for children that will consist of a few polished tools and other tools that I will be continuously working on polishing. In the future,

when I have my own classroom, I will ensure that the tool deck is adequately completed so that each student will receive their own tool deck to use throughout the year. I will also be held accountable for a reflection of the process and include documentation of student practice and experience. This will allow me to further make any necessary changes to the tool deck after properly reflecting on the strengths and weaknesses. Additionally, I will provide specific feedback from various teachers, administration, as well as the students involved. The feedback from the teachers and students will permit me to polish more tools included in the tool deck. Consequently, it is my hope that the feedback from my administrators will motivate them to seek the importance of creativity in our eager youth.

## **Section Five**

### **Personal Learning Goals**

- It would be great if my administrators identify me as a leader in ought to change how students learn.
- It would be great if I can influence the staff at my school enough to encourage every teacher to use creativity daily.
- I hope to provide students with powerful tools that they will continue to use.
- It would be great if this project allows me to become more confident as a professional educator.

### **Criteria Used to Measure Effectiveness**



After introducing a tool to a class, I will provide the students with a feedback form where they will be able to identify the strengths, weaknesses, and comments around the specific tool. This will serve as a guide to help me identify if students understood the tool and more importantly how it can be used, along with its importance. Each experience will be documented with pictures and videos so that I am able to further reflect on the process. Consequently, I will provide documentation from administration including their feedback and thoughts about the overall concept: utilizing CPS tools in the classroom.

The feedback forms and overall comments from teachers, students and principals will display whether or not I was successful. Since I am requiring each group to complete feedback forms after their experience, they will help guide me in the right direction. I will know what to change or do similarly for the next group based on the responses on the feedback forms.

### **Evaluation**

Evaluating my work is the most essential part of the project. It allows me to look back and identify the positives and negatives of what was completed. It also motivates me to assemble the final desired outcome; the CPS tool deck for children. As I stated previously, I will be receiving formal feedback from teachers, the students, and my principals which I will reflect on and include in the formulation of the final product. Informal feedback will also be apparent during each experience with each group of students. Identifying the students' engagement throughout the experience and catching the look on administration and the teachers' faces will say it all. Additionally, if my principals ask me to conduct a Professional Development seminar on the use of CPS will also encourage me as a leader.

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